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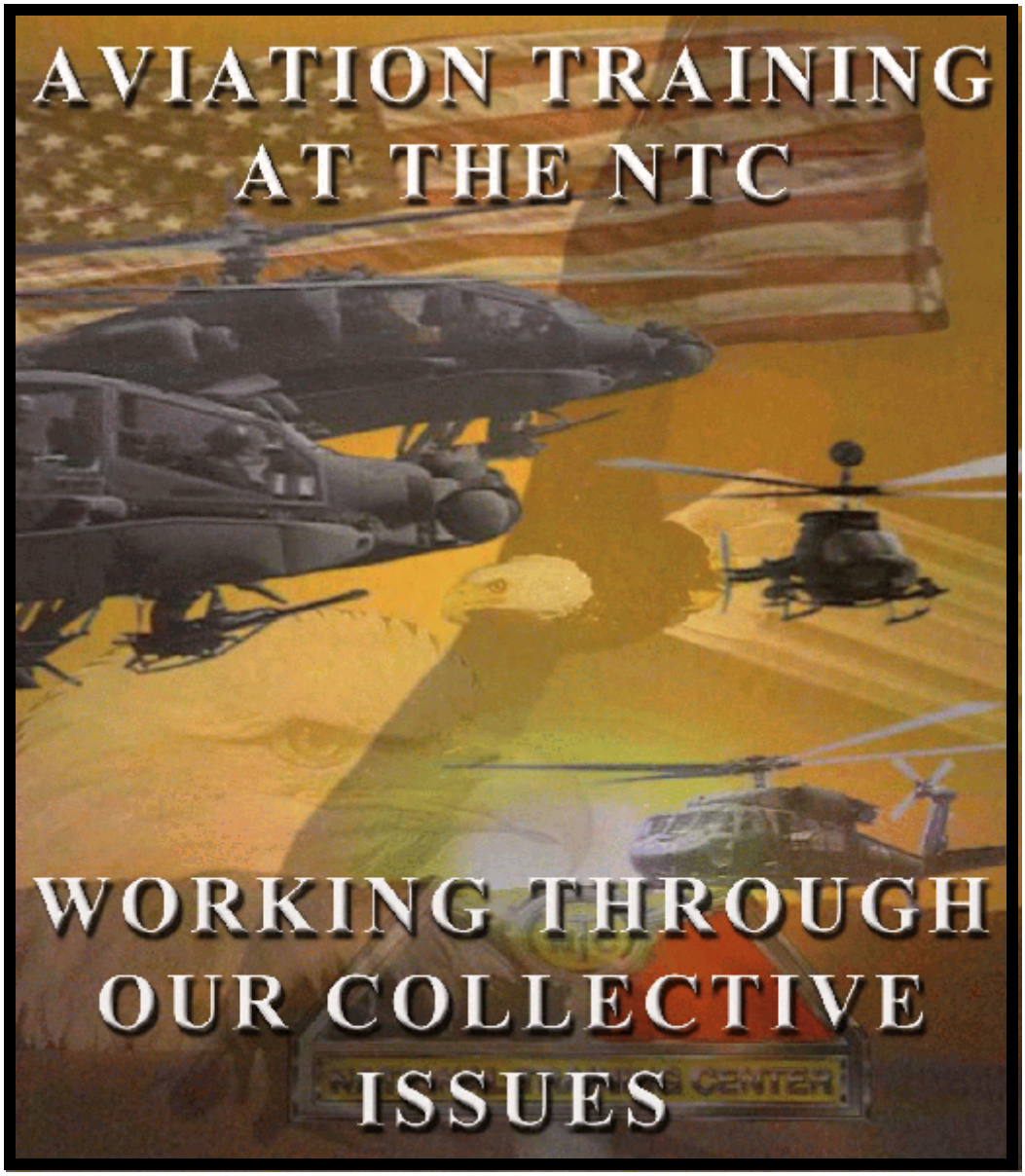

TACTICS, TECHNIQUES AND PROCEDURES

CENTER FOR ARMY LESSONS LEARNED (CALL)
U.S. ARMY TRAINING AND DOCTRINE COMMAND (TRADOC)
FORT LEAVENWORTH, KS 66027-1350

AVIATION TRAINING AT THE NTC

Working Through Our Collective Issues

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INTRODUCTION

AVIATION TRAINER'S OBSERVATIONS

Greetings from the Eagle Team of the National Training Center -- your aviation trainers. During the execution of our duties as observers/controllers, we have the opportunity to observe the full spectrum of Army aviation operations executed by various types of units from across the Army. The trends and tactics, techniques, and procedures (TTPs) discussed in this newsletter will provide the tools for units to improve Home Station training and enhance overall combat readiness.

The articles in this CALL edition are a compilation of observed trends collected over the past year. The two common denominators of all 12 articles are detailed planning and rehearsals. At the NTC we frequently see execution to standard at the crew and soldier level, which are only enhanced when brigades, battalion task forces, and/or companies/teams conduct thorough planning, including use of sound SOPs and detailed rehearsals, to ensure collective success.

By design, the NTC is a challenging training opportunity. Units operate at a high OPTEMPO under compressed timelines in a tough, realistic training environment. If unit staffs work efficiently, they set the conditions for the executing companies to succeed. The challenge lies in integrating rigor and friction (conditions) at Home Station.

"It wasn't that hard on my last JANUS exercise . . ." Effective air and ground integration is critical; ground elements at the NTC are not just icons on a computer screen. Has the unit coordinated with engineer assets to ensure the air Volcano minefield is correctly planned, triggered, and emplaced to enhance the obstacle plan? Has the unit planned indirect and direct fires to ensure the engagement area can meet the commander's intent? Is the direct fire plan effective, based on clearly delineated planning criteria found in doctrine? Do aircrews know the ground tactical plan and does insertion of any element support that plan?

Beyond conducting aviation operations, is the unit able to survive in the desert? Has the unit planned maintenance support based on the mission at hand and all environmental factors? Can the unit defend itself, and is it integrated with adjacent units for mutual support? Can the unit communicate with aircraft operating away from the assembly area, and are commanders positioned to best command and control their units? Finally, one of the single-most important questions any leader should continuously ask is, "Are we effectively managing risk, so that we can sustain our combat power and bring our soldiers home?"

These are a few of the issues probed in the accompanying articles. We welcome any feedback concerning the information in this Army aviation CALL edition.

We also have a significant amount of training ideas contained on our Eagle Team Web page at **http://www.irwin.army.mil/eagle.** Good luck with your Home Station training. We hope to work with you and your units soon.

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CHAPTER 1

NTC DECISION MAKING -- "THE DILEMMA"

by MAJ Christopher E. Walach

Several field manuals and a good amount of literature has been published regarding the Military Decision-Making Process (MDMP) as well as the decision-making process in a time-constrained environment. Why do aviation units come to the National Training Center (NTC) without all staff members understanding the full MDMP? **FM 101-5,** ***Staff Organization and Operations,*** bases planning in a time-constrained environment on the MDMP foundation. Executing missions at the NTC, whether during the building of combat power (reception, staging, onward movement, and integration phase), force-on-force, or live fire, fall within the realm of a time-constrained environment. How can staffs expect to operate in a time-constrained environment when these same staffs do not understand the MDMP?

Using the full MDMP or the decision-making process in a time-constrained environment is based on METT-T factors (FM 101-5). What does this mean? The commander and executive officer must execute the MDMP with all available staff members present and using all available time. As you can imagine, the biggest challenge commanders and executive officers have is effectively managing time (1/3-2/3 rule) and establishing and maintaining staff member MDMP discipline. When one looks at how people generally make decisions, particularly in the civilian sector, most organizational decisions are not made in a logical, rational manner. Most decisions do not begin with the careful analysis of a problem, followed by systematic analysis of alternatives, and finally implementation of a solution (Daft, 1998). We have two basic models that help us make military decisions: the problem-solving process and the MDMP. These two processes only work if they are vigorously applied. At the NTC, commanders and staffs often find themselves in a dilemma from producing effective orders to following the 1/3-2/3 planning window (Figure 1).

I will not discuss the basic elements of the MDMP because as stated previously, there is more than enough literature that discusses the entire MDMP. Let me pose a question, however, for XOs and S-3s: Why are units not ensuring that all staff members at least understand MDMP fundamentals before arriving at the NTC? The following answers are frequently given for this question: junior officers (non-advance course qualified), lack of Home Station field training time, and Home Station training distractors consuming time. Are units not fighting for prime training opportunities to ensure staff officers are successful at the NTC and in war?

In this article, I will list some recent MDMP observations and offer some tips for success that will better focus unit MDMP efforts at the NTC.

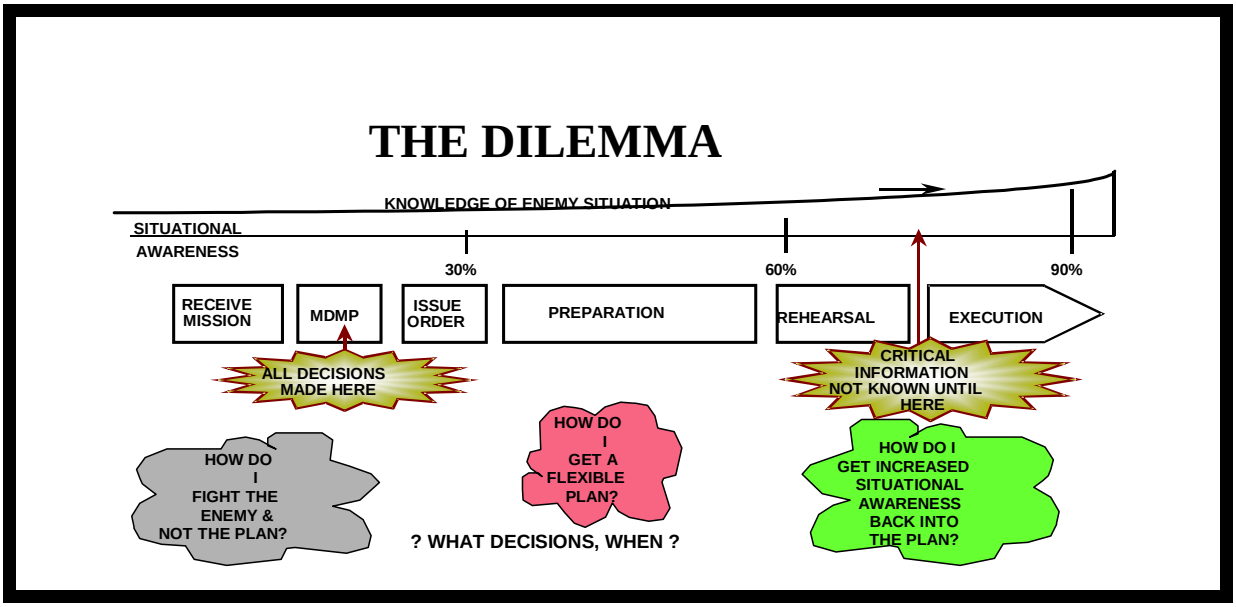

Figure 1. The Planning Dilemma

Observation: Staff officers do not understand the roles and responsibilities in "their lane."

Discussion: Staff sections as a whole are not as effective in conducting the MDMP when staff officers do not fully understand their roles and responsibilities. Aviation units assign many primary staff officers (S-1 to S-4) and special staff officers in these staff positions, often right out of a platoon leader position and generally waiting for officer advanced course dates, without understanding staff member basic roles and responsibilities. We often hear at the NTC that command and staff is the art and science. The command is the art and staff is the science of warfighting.

Success Tip #1: Ensure new staff officers understand their roles and responsibilities in garrison and field environments. XOs should mentor these junior officers early instead of waiting until executing the MDMP at the NTC to find out just how much they really know. A good place for junior officers to begin is to read Chapter 4 of FM 101-5 (Staff Responsibilities and Duties). Understanding staff roles and responsibilities is the foundation on which to build MDMP learning.

Observation: Staff members do not understand basic principles of the MDMP.

Discussion: How can units execute the MDMP in a time-constrained environment when staff members do not understand basic principles of the MDMP? FM 101-5 states that understanding the full MDMP is key to shortening the MDMP. Often at the NTC we see the MDMP conducted with maybe two staff members who understand the process. XOs and S-3s execute the lion's share of the MDMP with minimal input by other staff members. What is the MDMP "bottom line up front (BLUF)?" FM 101-5 states that the staff has one objective: ". . . to collectively integrate information with sound doctrine and technical competence to assist the commander in his decisions, leading ultimately to effective plans." A unit cannot collectively integrate all required information without having all staff members involved in the MDMP.

Success Tip #2: Train the staff before arriving at the NTC. Begin staff member training with what I call "classroom MDMP," followed by a series of Home Station battle drills using previously executed or new brigade operations orders. Set up two or three classes on the MDMP and have each staff officer go through an entire MDMP using a brigade operations order.

Success Tip #3: Following the "classroom MDMP" phase, execute a series of TOC and ALOC staff battle drills. Set up the TOCs and ALOCs outside the battalion headquarters building or battalion motor pool and have staff members go through an entire MDMP using all their field equipment and products. This provides an excellent opportunity to "shake out" all the field equipment while the NCOs conduct PCC/PCIs before deploying to the NTC. This may be a time-consuming process; however, the difference between a disciplined staff that understands the MDMP and a staff that is undisciplined is the difference between success at the NTC and self-induced staff challenges. Executing Home Station staff battle drills and a thorough understanding of FM 101-5 is essential before arriving at the NTC.

Success Tip #4: Instruct officers and NCOs to keep a running staff estimate. These running staff estimates are very effective as long as METT-T factors do not change.

Observation: Units do not effectively organize into primary and alternate or "A" and "B" team staff structures.

Discussion: Often staff sections are only "one deep" in terms of the ability to participate in the MDMP. When the primary staff officer is pulled away to "put out fires," the result is a lack of participation in and an incomplete MDMP. At the NTC we see very capable NCOs not effectively trained to fill in for the primary staff officer during the MDMP.

Success Tip #5: Include section NCOs in Home Station staff MDMP training.

Success Tip #6: Structure staff sections into primary and alternate or "A"and "B" teams. Organize these teams on a day and night cycle to allow for 24-hour operations or to fill in during the MDMP when the primary staff officer is not present.

Observation: XOs and S-3s do not effectively establish an initial MDMP working timeline.

Discussion: Units that make use of all available planning time and quickly establish staff timelines are more efficient executing the MDMP and producing plans and orders. When speed matters, a slow decision is as ineffective as the wrong decision. Every hour counts at the NTC when you are operating in a time-constrained environment. It is the companies and troops that suffer because of the battalion's lack of effective time management. Ineffective time management significantly impacts on the troop or company commander's ability to execute effective troop-leading procedures. Often, the XO does not establish an initial MDMP timeline, or when the timeline is established, all staff members are not held to it. Staff members must know when to collectively meet during critical MDMP periods. These critical periods include mission analysis, COA development, analysis and comparison, and the commander's decision brief.

Success Tip #7: XOs must establish and immediately disseminate the MDMP timeline to the battalion staff. Build in the 1/3-2/3 rule allowing additional time for "murphyisms." Post this timeline in the TOC for all staff sections to follow.

Success Tip #8: Issue the staff guidance to immediately begin parallel planning with their brigade counterparts. Too often, staff members do not make enough contact with their higher headquarters counterpart. Bring the company/troop commanders in and issue an initial warning order. Direct company commanders to integrate their company planning cells into the battalion planning process for parallel planning.

Success Tip #9: If possible, start the battalion MDMP before the brigade order is briefed. Obtain the aviation "task to subordinate" mission requirements following the brigade commander's decision brief. This will save approximately four to six hours of battalion planning time. As a minimum, mission analysis and initial COA development can begin.

Success Tip #10: At the brigade orders brief, send back a copy of the brigade order immediately so the staff can confirm mission taskings and continue the MDMP. This will save an additional three to four hours of planning time. As stated before, every hour counts (Figure 2).

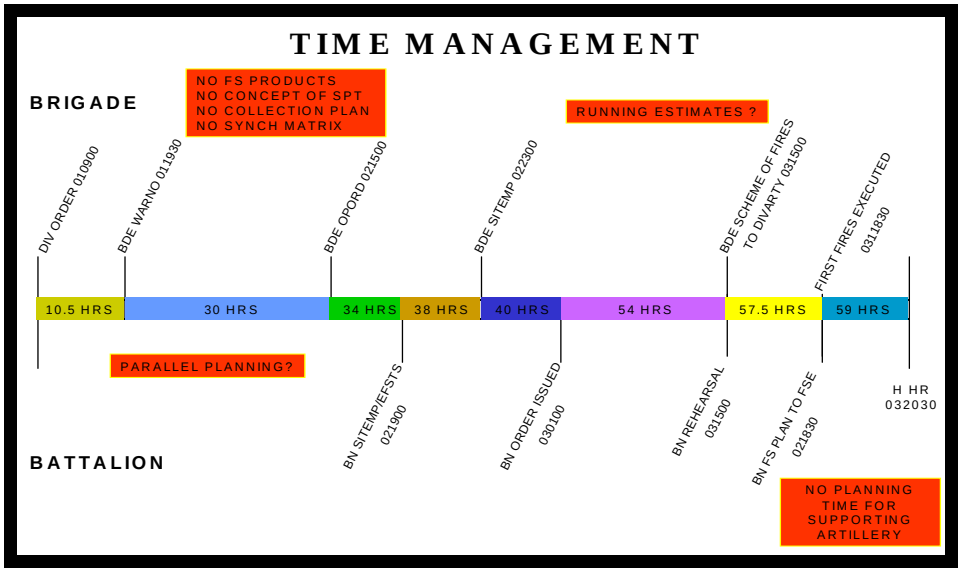

Figure 2. Time Management

Observation: Ineffective brigade aviation liaison operations delay early and effective MDMP.

Discussion: Early MDMP is beginning the battalion MDMP before the brigade order is briefed. Why not ensure brigade aviation LNOs integrate in the brigade planning process? Most of the aviation task force's "tasks to subordinate missions" are about as detailed as they are going to be after the brigade staff completes the commander's decision brief. Often, the aviation LNO does not know how to effectively obtain advanced mission planning data. Not knowing how to get this data or not understanding the importance of early mission information will impede the battalion parallel planning process and early MDMP execution. LNOs can be the best asset for information flow. Aviation LNOs do not understand their roles and responsibilities or the aviation commander's priorities for the current mission.

Success Tip #11: Establish a "foothold" in the brigade planning process. This will allow the aviation task force to begin the MDMP early, often saving four to five hours of waiting for the brigade orders brief.

Observation: XOs are not involving all staff members in the MDMP, or all staff officers are not present at critical periods of the MDMP (mission analysis, COA development, analysis, and comparison).

Discussion: By not involving all staff members in the MDMP, the obvious result is an incomplete MDMP. Remember the BLUF of why the MDMP is executed: "The staff collectively integrates information with sound doctrine and technical competence to assist the commander in his decisions, leading ultimately to effective plans." Make the task force commander's job easier by looking at all tactical angles and using all available staff members (Figure 3).

Success Tip #12: Bring the S-1, S-4, FSOs, SIGOs, CHEMOs, flight surgeon, TACOPS, and safety officer into the MDMP. The one person left out may have the one good idea that could increase your combat advantage.

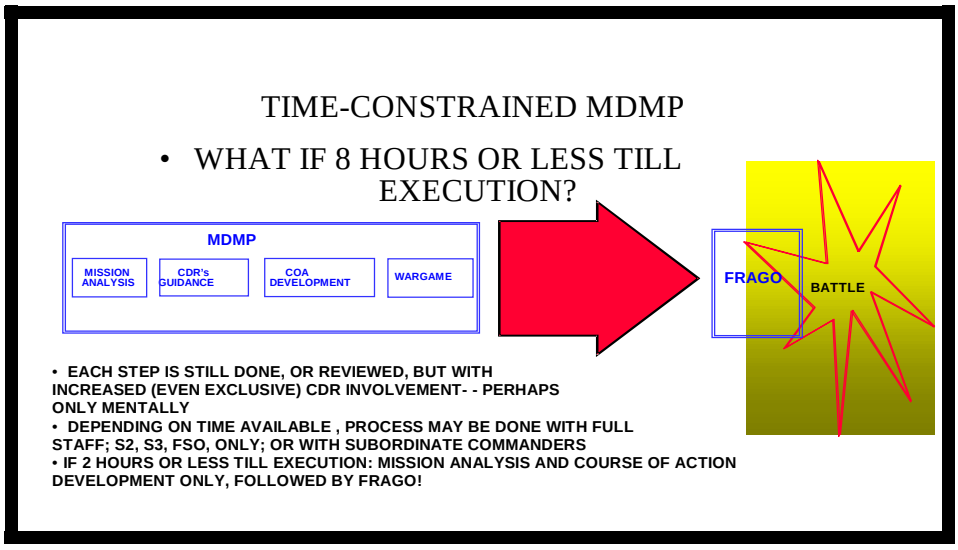

Figure 3. Time-Constrained MDMP

Observation: Units do not use simple checklists to guide the MDMP in a time-constrained environment.

Discussion: The best way to execute the MDMP is to have simple large-scale TASC charts to guide the staff through each critical part of the MDMP. Develop MDMP products by using these charts as a checklist for the staff. The following are products that units often do not include in their MDMP: IPB products, COA statements and sketches, CCIR, and a decision matrix that will eventually lead to completion of the unit synchronization matrix following the decision brief. Units that have charts to assist in the MDMP execution do not effectively use these charts during their MDMP and the result is often an incomplete MDMP. Even XOs and S-3s do not remember all steps to the MDMP! How can we expect junior staff officers to remember this process without simple checklists. XOs and S-3s can cover the major steps of the MDMP and use MDMP charts or staff "play cards" to ensure timeliness and proper MDMP execution.

Success Tip #13: Develop simple MDMP charts to help guide the staff through various parts of the MDMP. Some of the more popular charts include the following: MDMP timeline, MDMP agenda, mission analysis, COA development, analysis (COA sketches and synchronization matrix to record the wargame results), and comparison charts that outline the MDMP products required. You do not want to create a chart for every step of the MDMP, but you do need to develop a system to guide the staff's actions.

Future Thoughts

The MDMP observations and success tips listed above are not new. A challenge to commanders is to come to the NTC with a trend reversal unit plan instead of validating these same observations every rotation. There are many benefits to having a well-disciplined staff that is knowledgeable in the MDMP. The most obvious is that commanders will have a more efficient and effective staff team capable of quickly producing plans and operations. XOs and S-3s could spend more time doing XO and S-3 tasks instead of doing other staff members' jobs. A commander must develop a Home Station staff train-up action plan and train his staff before arriving at the NTC! Below is an example Home Station staff action plan for commanders to use as a starting point.✪

MDMP STAFF ACTION PLAN

1. Access the staff's knowledge on their roles and responsibilities and MDMP experience. Coach and train the staff based on this initial assessment.
2. Structure the staff team for 24-hour operations. Develop primary and alternate or "A" and "B" MDMP teams.
3. Develop and standardize simple MDMP execution and briefing charts.
4. Instill staff member MDMP discipline before arriving at the NTC. Require the staff to participate in every phase of the MDMP. Do not make this critical training optional.
5. Develop a "classroom MDMP" train-up period culminating in a series of TOC/ALOC staff battle drills. Challenge the staff with increasingly difficult tasks. Invite the brigade staff to "OC" staff battle drills and provide lessons learned to you and your staff.
6. Congratulate yourself and the unit on building an efficient and effective staff team ready to overcome any staff challenge at the NTC. A football coach does not send his team to their first game without ensuring the team is properly trained. Train your staff to hit the ground running at the NTC!

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Daft R. L. ***Organization Theory and Design.*** **Ohio: South-Western College Publishing, 1998.**

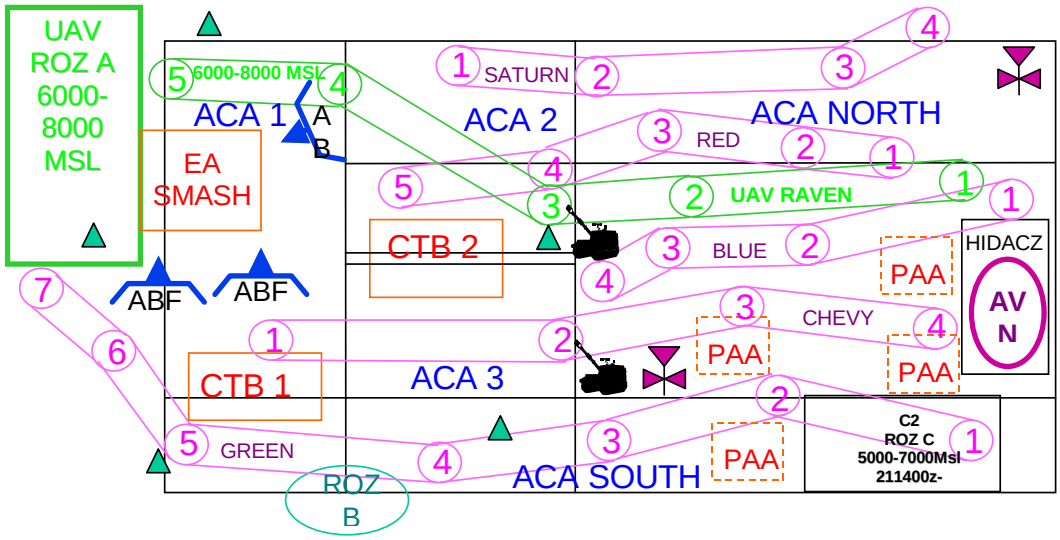
Headquarters, TRADOC. FM 101-5, ***Staff Organization and Operations,*** **1997. Kansas: Commander, US Army Combined Arms Center and Fort Leavenworth.**

CHAPTER 2

A2C2 PLANNING AND INTEGRATION: TOP DOWN AND BOTTOM-UP EFFORT

by CPT Nicholas Arata and CPT Christopher D. Niederhauser

As the airspace above the battlefield becomes increasingly saturated, synchronization of these assets becomes more critical. The National Training Center (NTC) is one of the few places in the world where units are able to exercise with all of the players vying for a piece of the air over the battle. Units who come to the NTC unprepared and untrained in the implementation and execution of airspace control measures (ACM) quickly find they are unable to mass all of their combat power at the decisive time and place on the battlefield.



Top-Down Planning

So which manual do units use for airspace doctrine? **FM100-103,** ***Army Airspace Command and Control in a Combat Zone,*** 1987, is still in print, but units generally agree that **FM 100-103-1,** ***ICAC2 Multiservice Procedures for Integrated Combat Airspace Command and Control,*** 1994, is probably the most up-to-date and best written doctrine on airspace. No special staff elements exist at the brigade and battalion level to perform the A^2C^2 function (FM 100-103-1), but as discussed later, **FM 71-3,** ***The Armored and Mechanized Infantry Brigade,*** places responsibility for airspace management on the S-3 Air. Therefore, on-hand staff members normally perform A^2C^2. The staff members who normally comprise the A^2C^2 staff element include the S-2, S-3 air, FSO, ALO, and liaison officers from ADA, ATS, and other aviation elements. All elements within the A^2C^2 network form vertical and horizontal channels to pass critical information. Usually a small percentage of those required to attend actually take part in the MDMP. If not all airspace users are available for planning, who is ready to fill in to answer critical questions? Unfortunately, at the NTC we often see an LNO doing the airspace planning for a brigade combat team (BCT) with little or no input from other users because the staff has focused on a two-dimensional instead of three-dimensional battlefield in their train-up.

A^2C^2 in the BCT main command post is a continuous process that begins in the mission analysis phase of a BCT's MDMP and ends after execution of an operation. A^2C^2 success relies directly on the BCT's ability to focus on this continuous process of managing its airspace. Too many times at the NTC we see the BCT staff's inability or oversight of designating one officer to fill the role and responsibilities of the BCT "airspace manager."

According to FM 71-3, the S-3 Air at the brigade level is the A^2C^2 cell leader. It is his responsibility to synchronize and deconflict ACMs to ensure that maximum combat effectiveness of all airspace users occurs. The S-3 Air must be the one staff member who is always thinking in the third dimension. All plans and COAs developed and approved must have the S-3 Air constantly asking himself, "What is affecting airspace if we do this?" He must constantly consult with and be available to other members of the A^2C^2 cell -- the ADAO, FSO, ALO, S-2, and aviation LNO -- during and after the MDMP. At the NTC we see aviation LNOs attached to the BCT staff assuming duties of the S-3 Air because the designated S-3 Air is usually a planner. Although this may be feasible, issues usually arise from this arrangement.

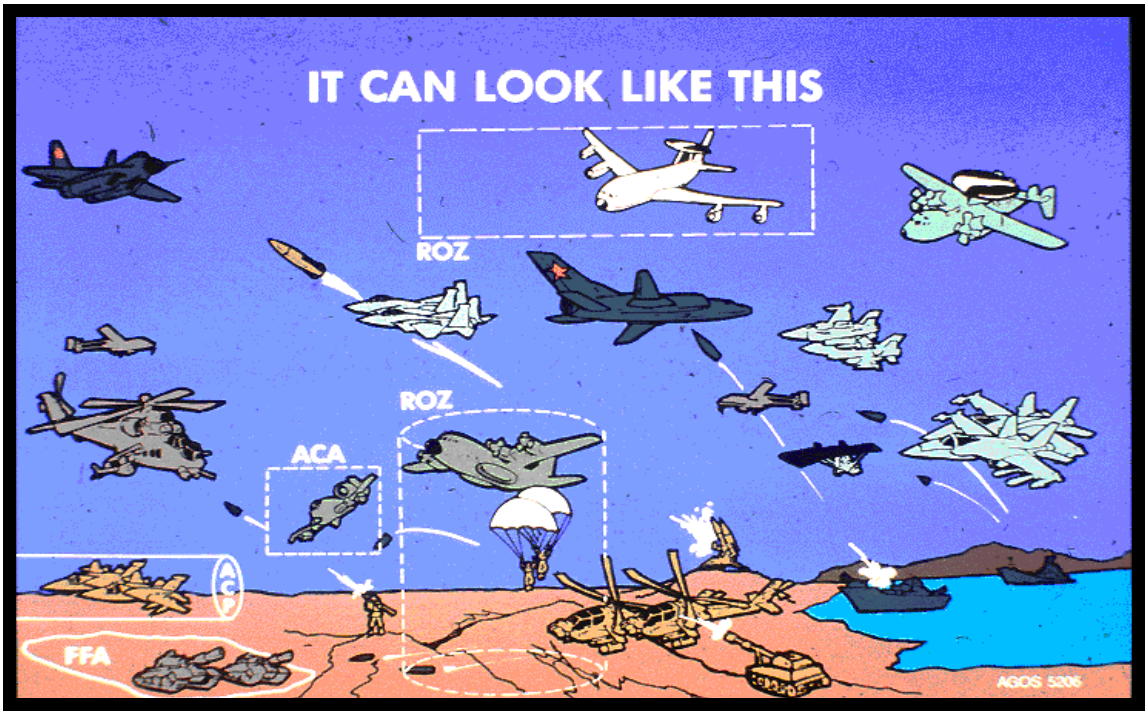
The heart and soul of A^2C^2 integration in the BCT occurs at the wargame phase of the BCT's MDMP. When the BCT develops the combined operations overlay as a result of the wargaming phase, improper integration often occurs. The S-3 Air and/or the aviation LNO often begin their air corridor and ACM development after the staff plots all the artillery position areas, operational areas, EAs, BPs, and FASCAM minefield targets. The products that result when the ACMs are developed after the ground maneuver graphics include poor air corridors and other ACM locations. This is not integration. The proper A^2C^2 integration will occur when all combat systems in a BCT simultaneously build the operations overlay while recognizing each other's requirements to contribute to the fight. Good, early development of ACMs will result in a useful, flexible A^2C^2 plan that will result in truly decentralized execution of A^2C^2 and the ability of Army aviation to be a combat multiplier.

Role of the LNO

According to the U.S. Army Aviation Center LNO Handbook, **FM1-100,** ***Army Aviation Operations***, and FM 71-3, the role of the LNO is to represent the aviation unit commander at a designated headquarters for the duration of an operation. The LNO must involve himself in the command estimate process to ensure the planned employment is within the aviation capabilities of assets available and is doctrinally correct. If the LNO is to accomplish these duties properly, it becomes very difficult to accomplish the S-3 Air duties concurrently, especially if the LNO is only at the BCT TOC for the duration of an operation. It is important to remember that Army aviation is not the only airspace user that needs synchronization in a BCT's area of operation.

Another problem seen at the NTC is the inability of the BCT S-3 Air and LNO to request, receive, and integrate bottom-up ACM refinement from the aviation task force. The S-3 Air and aviation LNO can develop ACMs at the BCT; however, they should send this information to the aviation task force in a timely matter for refinement. After all, do we want our aviators at the task force involved in this process? Absolutely!

Of course, once the A^2C^2 plan is developed, the mode by which this information is shared also becomes critical. One of the most preferred systems to share this information is the TACLAN. This system makes it possible for bottom-up refinement of all ACMs in a way not much different from the way artillery units share fire support coordination measures through AFATADS or IFSAS. The least preferred option would be, of course, the runner in the lone HMMWV. Whichever system is available to the aviation task force and the BCT, it is imperative that the unit refines as early as possible to expedite its dissemination up and down and especially if ACMs are integrated into the air tasking order.



Units must develop clearly defined checklists and follow them to aid in execution and to ensure the safety of aircrews. With this checklist, units can follow a standard delineating the dissemination of airspace control measures in the BCT. The standard can be voice, MCS, TACFAX, AFATDS, or messenger; however, the information must be passed for it to be effective.

Bottom-Up Refinement - Battalion and Company Level Planning

As stated above, no special staff element exists in the battalion to perform A^2C^2 functions. A^2C^2 normally falls on the shoulders of a battle captain in the TOC. New and refined ACMs are usually kept at the company or battalion level and not passed to the brigade. This problem goes back to staff organization at battalion and planning cell requirements in the company. Units do not make someone responsible to track new or changed measures and ensure it is passed up and down the chain.

Once the order is complete and briefed, aviation company commanders usually feel they have no options and must live with the ACMs in place. Unfortunately, the company is usually the best level at which to conduct detailed planning and analysis of an existing plan. It is incumbent on the company to conduct a thorough analysis of the measures in place versus the commander's intent and mission, identify conflicts, and refine the ACM to maximize aircraft survivability on the battlefield. Battalion A^2C^2 elements, if established, do not understand their responsibilities. Some of these responsibilities include the following:

a. Identify and resolve airspace conflicts.
b. Develop and maintain airspace use and situation overlays or automated displays.
c. Request, maintain, and disseminate A^2C^2 measures or restrictions.
d. Develop and coordinate the A^2C^2 annex.

This is a check and balance system that provides redundant effort at the brigade, battalion, and company level.

Companies do not refine the battalion plan for company execution. Companies usually receive their mission graphics on an overlay. The amount of refinement normally consists of moving the graphics from the overlay to the Aviation Mission Planning System (AMPS). Very seldom is the AMPS used to refine routes, attack-by-fire (ABF) positions, or observation posts (OPs). Companies should, at a minimum, develop routing from release point (RP) to ABF/battle position (BP), review ABF/OP/BPs for suitability and feasibility, and rehearse their plan to identify conflicts and offer solutions to battalion.

If companies do, in fact, refine the battalion plan, they often do not consider other elements using the airspace and how they can support the company's execution. For example, knowing the grid zone identifiers of artillery weapons and selecting firing positions for Copperhead are not mutually exclusive; however, many companies do not know where the firing units are and whether or not their targets are in range.

In addition to all the other things a staff must do to succeed at the NTC, the synchronization of airspace using systems is usually the last thing considered at the BCT level. To be effective, every staff must remember A^2C^2 as part of their planning. As personnel review and change existing information, it is imperative that all airspace users receive these updates as soon as possible. It is not just Army aviation using the sky anymore.

Tactics, Techniques and Procedures

1. A^2C^2 must be a continuous process – from initial planning through wargaming and execution.
2. Assemble the appropriate personnel to plan properly (S-2, S-3 Air, AVN LNO, FSO, ALO, ADA, ATS).
3. Educate the supported ground unit(s) on unit needs, or send a full-time LNO to perform S-3 Air functions.
4. Aggressively refine ACMs from the bottom up (aviation company level) and ensure this information is communicated back to the higher headquarters.
5. Develop a system to notify the right people at the right time of any changes.✪

CHAPTER 3

AIR-GROUND INTEGRATION
by CPT Robert T. Ault

The challenge of air-ground integration at the National Training Center (NTC) is to synchronize aviation operations into the ground scheme of maneuver. Air-ground integration is critical to all aspects of aviation operations. Units must integrate attack and cavalry operations as well as assault and general support missions with the operations occurring on the ground beneath them. This article will address a few of the trends observed at the NTC.

The three critical components of air-ground integration are: understanding the ground scheme of maneuver, proper liaison, and deconfliction. Brigade combat team (BCT) planners down to the individual aircrews should consider these three elements of good air-ground integration. A failure to properly consider these components can result in a desynchronized and ineffective plan or even friendly losses due to fratricide.

Understanding the Ground Scheme of Maneuver

Observation: Planners from BCT to the aviation task force must focus on integrating aviation operations into the scheme of maneuver.

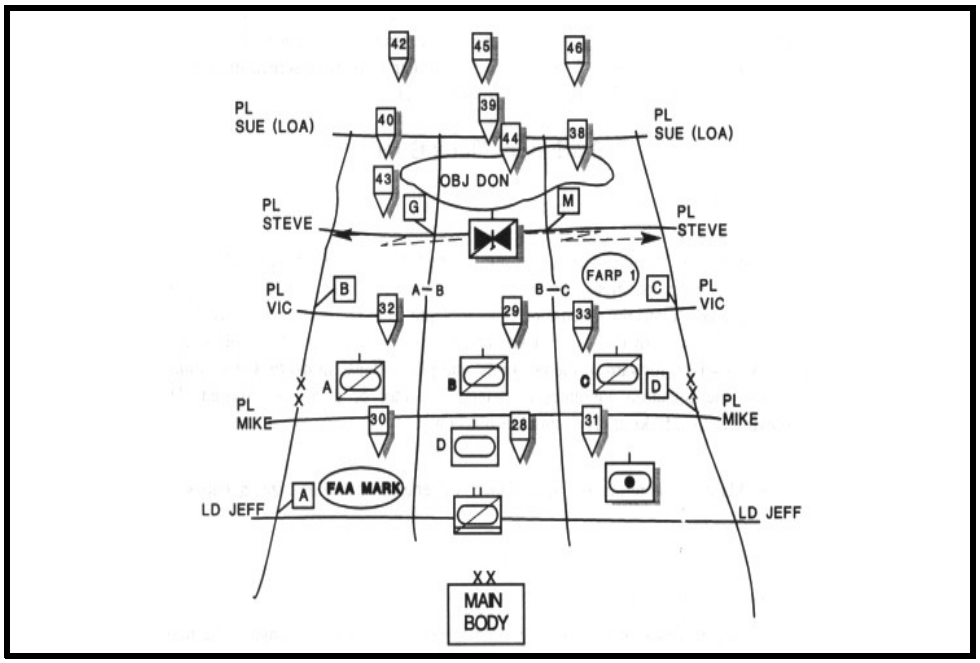
Discussion: This is the most critical element of good air-ground integration. Developing and maintaining good situational awareness starts with a plan at the BCT and aviation task force that is built around the ground scheme of maneuver. Observed planning trends are:

! Failure to rehearse key events together such as fire support, battle handover, and passage of lines.
! Failure to post friendly graphics on operational maps.
! Lack of visualization by staffs and commanders on how the battle will look at various stages.
! Failure to ask for a ground LNO at the aviation TOC during the planning phases.
! Failure to publish appropriate ground frequencies on which the aviation task force will be operating.
! Failure to deconflict airspace.
! Failure to develop appropriate fratricide prevention methods.

Observation: Planners must work across their particular lanes of expertise.

Discussion: Cross-talk at all levels is vital to ensure that integration of the unit's actions into the BCT's overall plan do not stand alone. This is particularly critical when it comes to air-ground integration. Aviation task force key personnel (staff) are essentially the same as the BCT staff, with the addition of the tactical operations officer. Key planners at the BCT level that aid in air-ground integration are:

! BCT S-3
! BCT S-2
! Aviation LNO
! BCT FSO
! ADA LNO
! S-3 Air
! ALO/TALO
! SIGO



Observation: Employ aviation at the critical point on the battlefield.

Discussion: A plan that integrates aviation into, not just above, ground elements enhances combat power. Integration essentially means the application of Army aviation at the ground commander's critical point on the battlefield. Numerous observations from the NTC indicate that at the time of execution, aviation assets are simply brought forward to find targets without coordination.

An example of poor air-ground integration: aviation forces conducting a screen line in close proximity to friendly ground forces and not having necessary frequencies to pass real time intel/spot reports. This lack of air-ground integration greatly reduces the effectiveness of both air and ground units. In most cases, aviation elements spend an inordinate amount of time attempting to clear fires or gain direct fire clearance through aviation channels. This can be a cumbersome system on a fast moving battlefield. Additionally, a lack of communication, and the lack of situational awareness that accompanies it, greatly increases the chances of fratricide from improper identification of friendly vehicles.

Recommendation: A well-integrated plan that contains ground graphics and the means to communicate with units on the ground is the first step in developing good situational awareness and air-ground integration.

Proper Liaison

Observation: Liaison at all levels is important to the integration of Army aviation.

Discussion: Observed trends regarding LNO operations:

- Units send inexperienced officers or warrant officers to act as LNOs.
- Vague guidance from the aviation task force.
- LNOs do not have a habitual relationship with the supported unit and do not have a working knowledge of SOPs and commander's intent.
- LNOs are not equipped with the proper radios and/or vehicles to conduct liaison operations.
- LNOs are not taking an active role in mission analysis to interject the capabilities or limitations of aviation beyond their primary aircraft (lack of aviation knowledge).
- A hesitation by aviation S-3s to request an LNO from a supported ground unit to aid in integration.
- LNO does not coordinate with other members of the task force or BCT staff to facilitate aviation operations.
- BCT LNOs are not aware of their role in airspace management and deconfliction or how to request airspace.
- LNOs are not forwarding the airspace coordination order (ACO) to the aviation task force in a timely manner.
- A failure of aviation assets to conduct face-to-face coordination prior to conducting operations in the ground unit's sector.
- Failure of the BCT aviation LNO to keep the aviation task force informed of BCT rehearsals and other key events.

Observation: Once the battle begins, the aviation LNO must work hard to push information down to the aviation task force.

Discussion: An active BCT LNO will assist the aviation S-3 by battle-tracking, conducting the running staff estimate, and issuing predictive analysis to avoid the "911" use of aviation. These actions at the BCT level will increase the aviation task force's situational awareness as the battle progresses.

Recommendation: Units must train LNOs at Home Station prior to arrival at the NTC and/or prior to conducting operations in support of the BCT.

Deconfliction

Observation: Deconfliction is a continual process conducted across the various staffs at both the BCT and aviation task force.

Discussion: Beginning in the planning process, aviation units must deconflict their operations from:

- Indirect fires.
- Fixed wing assets such as close air support and containerized delivery system (CDS) drops.
- Smoke operations.
- Special operations aviation missions.
- Unmanned aerial vehicles.
- Air defense artillery.

The aviation task force must consider the missions listed plus deconfliction between other aviation companies in the task force. An example would be deconfliction between a scout insertion of one company and the conduct of a zone reconnaissance by another.

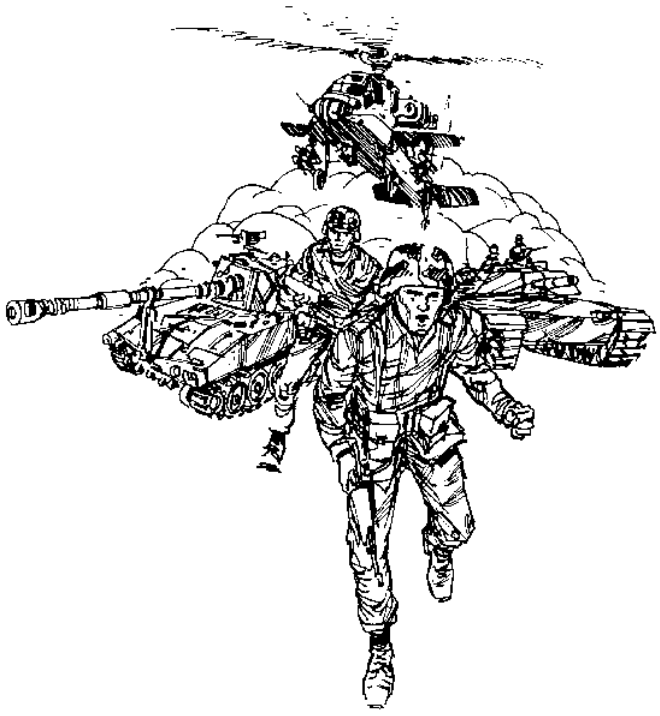
Deconfliction continues during mission execution. The following are trends regarding ongoing deconfliction:

- ! Improper vehicle identification.
- ! Aircrews not developing an accurate picture of the ground situation.
- ! Failure to understand engagement criteria.
- ! Lack of battlefield visualization by company commanders and aircrews.
- ! Lack of dissemination of weapons' control status to aircrews.
- ! Lack of understanding by all aircrews of engagement criteria.

Recommendation: A well-integrated plan will lead to a deconflicted plan, but only if aviation works to be in the plan and not separate from it.

Conclusion

The synchronization of a commander's assets on the modern battlefield poses a serious challenge. The BCT must integrate aviation and ground units to enhance combat effectiveness. The BCT is designed around its ground maneuver battalions. Any plans and orders are essentially ground schemes of maneuver that must include aviation, not simply add them as an afterthought. The use of LNOs is critical, both in the planning process and to the development of situational awareness. Deconfliction is an ongoing process that units must conduct until completion of the mission.✪



CHAPTER 4

ENGAGEMENT AREA DEVELOPMENT AT THE NATIONAL TRAINING CENTER

by CPT Johnny O. Gass and CPT Brian F. Agena

The overall goal of attack helicopter operations is to destroy enemy formations in a given engagement area. To accomplish this goal the battalion staff must understand and exercise the three steps in the engagement area development process as outlined in Chapter 3 of **FM 1-112, *Attack Helicopter Operations.*** Trends at the National Training Center (NTC) show that battalion staffs fail to utilize all of the steps outlined in FM 1-112 to conduct engagement area development. This results in engagement areas, battle positions, and attack-by-fire positions becoming nothing more than marks on the map.

Coordinated Staff Effort

To ensure these marks on the map have meaning, the unit must execute detailed engagement area planning during the deliberate decision-making process. The NTC has a diverse and challenging environment, which presents numerous obstacles to unit planners developing engagement areas. These challenges become more daunting if the unit staff does not focus its effort. Often at the NTC staff members are seen working in a vacuum, each on their own agenda. To succeed, the staff must work in a coordinated effort, using all available tools. Additionally, all players must understand the commander's intent.

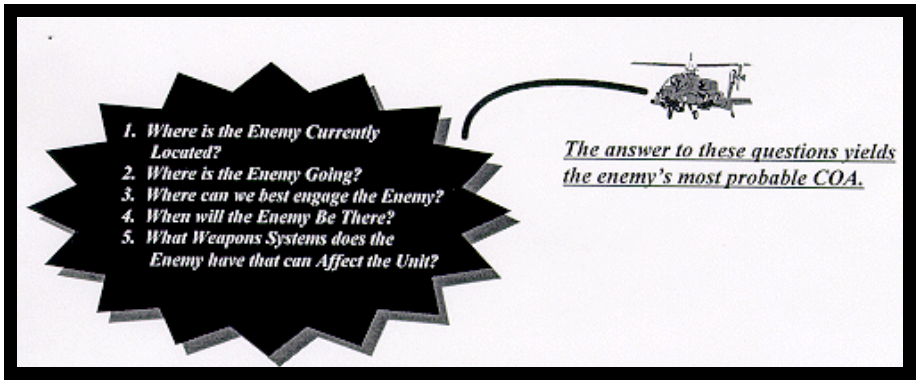
Planners can ensure adequate integration of the engagement area after they consider and employ all available BOS assets to guarantee maximum destruction of the enemy formation at a pre-determined location. Units at the NTC fall short in this step by failing to integrate indirect fires, obstacles, and organic direct fire planning in the wargaming process.

In the close fight, the unit must understand the ground commander's mission statement and his scheme of maneuver. The attack battalion LNO is the link between ground and air assets, acting as a conduit for a constant flow of ever-changing information to his parent unit.

Know Your Enemy

The S-2 is a key player in assisting the attack battalion in all phases of the operation, not just engagement area development. He must understand the TTPs of the opposing force (OPFOR) and, during the wargaming process,

portray them as a uncooperative enemy. Units commonly fail to conduct appropriate IPB, which causes the unit to misread the OPFOR's most probable course of action (COA). As the IPB becomes refined, the S-2 should be able to answer the following questions:

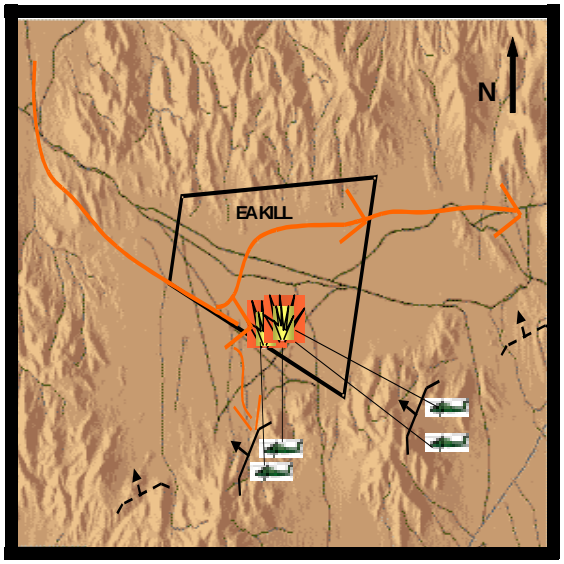


Answering these five questions will yield the enemy's most probable COA, which provides a focus for planning in a specific area of operations. Once the S-2 identifies the enemy's most probable COA, the battalion commander picks the point on the ground where he wants to kill the enemy. This is the point where the commander intends to mass his combat power (FM 1-112).

As the process continues, the S-2 must predict how the enemy will look during movement along his axis of advance, and how the enemy will react once engaged with direct fire weapons. The S-2 provides a description of these reactions while wargaming integration of the engagement area. A good S-2 will show the S-3 how the enemy's actions can unhinge the unit's plan. These actions will constitute the most dangerous COA.

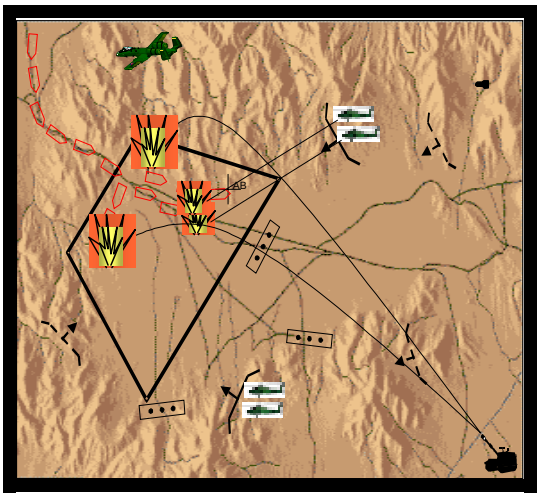
The NTC OPFOR is not a cooperative enemy. They are reconnaissance-oriented, with an increased level of unpredictability. They have shifted from Soviet doctrine and tactics to a capabilities-based force, flexible and adaptable to current and future requirements of the joint team.

In addition to the nine elements of the commander's guidance, units must consider several other factors, such as terrain, weather, and weapons/sensor ranges. The terrain at the NTC allows for the selection of engagement areas that are conducive to flank shots into the OPFOR. Conversely, it allows the OPFOR to shift away from the attacking aircraft while maintaining their forward movement. They will complement this shift by directing reconnaissance elements to use the north/south wadi system to action on attacking aircraft.



Wargaming is Critical

Just as the S-2 conducts action, reaction, and counter-reaction in the engagement area, the S-3/FSO conducts the same drill. The staff must wargame friendly actions versus enemy reactions to determine where to employ artillery, CAS, mortars, and obstacles in the engagement area to shape the battle space for the direct fire fight. By properly integrating the engagement area and portraying an uncooperative enemy, the battalion staff begins to eliminate the OPFOR's options. This will maximize the use of all available weapons systems and provide maximum survivability for the force.



A properly integrated EA that eliminates the enemy's options maximizes the use of all available weapons systems and provides maximum surivivability for a unit's forces.

Once wargaming is complete, the unit should have the answer to these six questions.

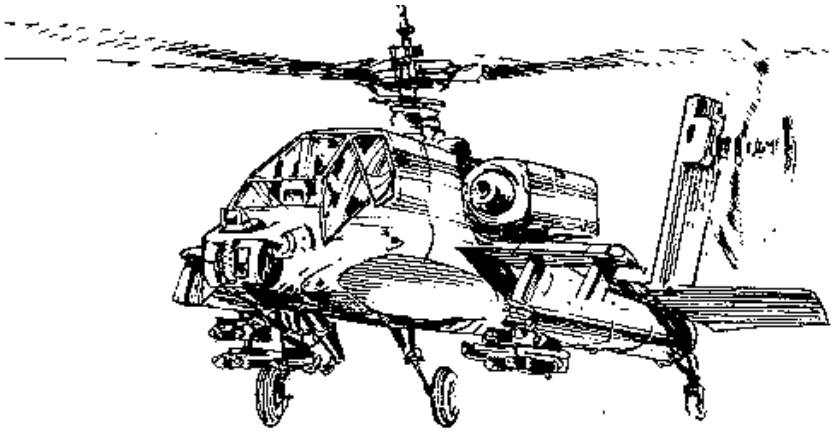
1. What is the endstate of the indirect fire plan?
   - ! Task and purpose for targets?
   - ! Who is the primary/alternate observer?
   - ! What is the triggers?
2. How much artillery/CAS/mortars are available?
3. Who will initiate fires?
4. How will the unit shift fires?
5. Who will clear fires once the direct fire fight begins?
6. How will the unit maneuver to continue the engagement or break contact?

Conclusion

Destroying enemy formations at the NTC is no small task. The OPFOR is a mobile, thinking, and uncooperative enemy. In addition, less than ideal timelines, stress, and fatigue introduce an increasing level of battlefield friction. Trends at the NTC show units overcoming several internal obstacles. As stated earlier, the number one trend at the NTC is the lack of familiarity with doctrine. The second most common trend is personnel (staffs) who are knowledgeable in doctrine but not organized, and thus do not work effectively together or do not integrate their operations with the ground forces. By answering the questions listed above and completing the three steps in engagement area development (using FM 1-112), your plan should be complete. A plan that produces engagement areas which allow the commander to trap the OPFOR, deny him flexibility, and cause him to be a reactive predictable force will lead to success on the battlefield.

Tactics, Techniques and Procedures

1. Focus the staff. Knowledge in MDMP and organization are critical.
2. Integrate all available assets, including organic direct fires, ground-based direct fires, indirect fires, and obstacles. This requires effective air-ground integration.
3. Know your enemy. The S-2 must aggressively pursue information, know where to get it and how to analyze it. Have other units (air or ground) already encountered this enemy?
4. Conduct thorough wargaming. "Per SOP" is not the answer.✪



CHAPTER 5

DIRECT FIRE PLANNING

by CPT Paul A. Mele and CPT John E. Burger

Introduction

Though possessing the necessary combat power, companies often fail to achieve the desired effects during direct fire engagements. Why? Because companies are not developing, rehearsing, or executing successful direct fire plans. Lacking a detailed direct fire plan, companies fail to mass fires, lose the initiative to an agile OPFOR, and suffer excessive losses near the engagement areas (EA). Additionally, without a detailed plan and accompanying rehearsal, companies waste an excessive amount of station time trying to deconflict organic fires, attempting to maneuver as demanded by changing conditions, and employing complimentary systems. The end result is that the company does not accomplish the mission within the commander's intent, and requires additional time and assets to achieve the desired effects.

FM 1-112*, Attack Helicopter Operations,* explains the eight-step process for EA planning to ensure successful EA development and direct fire planning. "Plan the direct fire fight" (step 4) is the essence of attack helicopter company operations and, doctrinally, the company's responsibility; however, companies generally devote little energy to this task. Additionally, the company commander must understand battalion EA development (steps 1-3) to ensure the company accomplishes the mission within the commander's intent. One technique to develop the direct fire plan is to use the principles of direct fire as a framework to ensure the completeness of the company plan. These principles are not compartmentalized blocks to be addressed in isolation, but integrated steps, each refining the others. Additionally, continuous review of the principles throughout all phases of planning and execution is critical to ensure the fire plan remains viable as battlespace conditions change.

The points below, organized according to the principles of direct fire, focus on some of the repetitive deficiencies prevalent in direct fire plans developed by attack and cavalry aviation units fighting at the National Training Center (NTC). Where applicable, tactics, techniques and procedures are available to help the company avoid the usual pitfalls and develop a detailed, successful direct fire plan.

Mass

Observation: Companies do not bring all available systems to bear on the OPFOR at the critical time and place.

Discussion: Too often commanders, especially in the close fight, do not identify and capitalize on the many fire and acquisition systems available to them. They rarely consider: Are my organic fires enough to accomplish the mission? What complimentary systems are available during my station time? Is CAS loitering within range? Supporting indirect fires? Are mortars available? Are obstacles in the EA? Are there ground units that can help gain and maintain contact? When engaged by only attack aircraft, OPFOR rapidly action all systems toward the attacking aircraft, usually achieving direct hits by ADA and tanks. When employed, supporting fires from complimentary systems destroy OPFOR systems, force OPFOR to fight in multiple directions, and provide covering fire while aircraft maneuver and egress.

Similarly, planners rarely consider obstacles and their effects on the OPFOR in the EA during direct fire planning, even though "obstacles" is one of four characteristics of a good EA listed in Section 3-3 of FM 1-112. Units do not integrate anticipated OPFOR reactions to obstacles in the direct fire plan. Companies must base target array and fire pattern methods of fire distribution on how the OPFOR will look before, during, and after negotiating the obstacles. Companies must also anticipate OPFOR obscuration of obstacles and the resulting degradation of target acquisition and precision-guided munitions performance.

Often, aviation companies lose valuable station time maneuvering and acquiring the OPFOR when other BCT members have already gained contact. Companies must continually seek OPFOR locations and dispositions from all acquisition systems available. Cross-talk between the company and the ground task forces, ground cavalry scouts, COLTs, LRSDs, BRTs, GSRs, and other available intelligence gathering systems will help the company maneuver to engage the enemy quickly and with minimal aircraft losses. Proactive planning and coordination results in responsive, effective use of all complimentary systems to help the company maneuver, acquire the enemy, and maximize effects of their organic weapons.

Company commanders also fail to identify exactly when and where the effects of their fires can be most lethal against the OPFOR. What is the critical time and place? Usually the company is given a time and place to conduct the attack based on the S-2's analysis, but seldom does the OPFOR present itself exactly when and where the S-2 predicted. Companies that identify "XXXX hours" as the critical time and the templated OPFOR positions in the EA as the critical place regardless of battlespace conditions and OPFOR disposition, rarely succeed when forced to develop a maneuver and fire plan on the go. The commander must prepare the company to transition to a

movement-to-contact and then a hasty attack when unable to acquire the OPFOR from primary positions. Intelligence must drive company maneuver to defeat the thinking, uncooperative OPFOR. Successful, proactive commanders use validated company battle drills or "plays" to quickly build and disseminate a maneuver plan that places the company where it can best achieve the desired effects. Based on a thorough analysis of the commander's intent and the company refinement of battalion IPB, the commander may choose to wait in present position, maneuver to engage OPFOR, or return to HA/AA.

Leaders Control Fires

Observation: Companies deliver piecemeal fires into the EA because they fail to initiate fires at the critical time and place or to continually assess effectiveness of their fires during the engagement.

Discussion: FM1-112, Section 3-16, details the processes for commanders to control fires; however, companies often fail to mass organic fires or synchronize supporting fires because they have not developed a plan to initiate and control fires. Most units rely on directive measures such as radio messages (fire commands) to initiate fires, but often aircraft dispersed for survivability in broken terrain around the EA fail to receive the command, resulting in piecemealed fires. Rarely do companies develop back-up procedural measures (fire plans) with triggers such as "point on ground," "OPFOR action," or "time." If developed, companies usually fail to properly integrate these triggers into the EA. In many instances, not all crews can observe the trigger point on the ground, nor do they understand what kind of OPFOR element crossing that point should trigger fires. Often, the acquisition of a lone OPFOR vehicle results in unwarranted, premature, piecemealed fires that alert the OPFOR main body to aircraft positions. Likewise, crews do not understand what OPFOR actions should trigger company fires: OPFOR actioning towards aircraft? maneuvering out of EA? establishing defensive posture? Commanders must develop clear intent and engagement criteria that detail each planned fires trigger for both organic and supporting systems to facilitate massed fires.

When "Time on Target" is the backup trigger, units often fail to achieve massed fires because leaders fail to continually assess the OPFOR disposition after takeoff and, accordingly, amend the "time" to initiate fires. The uncooperative OPFOR may not be in range or the disposition expected at the "planned time," but some crews will initiate fires anyway. Similarly, commanders do not understand the necessary tasks and associated time required for those tasks that precede initiation of fires to develop the planned "Time on Target." Often, en route planning is sufficient, but analysis of actions necessary between RP and trigger pull (such as maneuver to and clear of the attack-by-fire position, establish local security, adjust fires distribution, and acquire OPFOR) is insufficient to develop a realistic "time" to initiate fires. The company reverse planning sequence must include detailed analysis of those tasks required between takeoff and trigger pull combined with company IPB, to ensure posturing of all weapon systems to achieve the desired effects at the critical time and place.

Commanders must also develop disengagement and reposition criteria to help preserve the company's plan to mass fires. Commanders seldom evaluate the company's disposition and effectiveness during the engagement. Therefore, aircrews often remain in ineffective positions, achieving little effects, rather than maneuvering to more suitable positions. Commanders that do try to maneuver are unable to clearly articulate the maneuver plan because they have not developed, validated, and trained company battle drills or "plays" to execute in such situations. Consequently, excessive radio traffic and poorly articulated task and purpose cause uncoordinated maneuver with piecemealed fires. Commanders must enforce proper reporting procedures and standards to assess the company's effectiveness (BDA, OPFOR reaction) during their engagement to provide sound, timely recommendations to higher. These recommendations are essential for higher to control the fires and assets in its task organization.

Focus Fires

Observation: Companies fail to mass fires in the EA because company IPB does not identify the critical time and place fires are necessary to achieve the commander's intent.

Discussion: "Our company fires will be focused into the EA." Too often this constitutes the entire effort dedicated to focusing company fires during direct fire planning. Commanders do not understand the criticality of translating the intent from higher into a very specific "what to shoot and when" for their crews. Commanders do not deliberately wargame how the OPFOR will maneuver through the EA or how the OPFOR will look at each stage of the engagement. Usually the company plans to attack a red OPFOR icon, templated in the middle of the EA. To accurately "see the OPFOR," company IPB must break the enemy down to individual vehicles. No unit yet has acquired a red diamond rolling across the desert floor. Once able to "see the OPFOR," the commander must provide guidance to the planning cells to ensure the company plan accomplishes the mission within the commander's intent. One successful method is to enumerate the critical tasks necessary to achieve the desired effects throughout the direct fire engagement. Tasks are METT-T dependent and may be as simple as stating the engagement and target priorities; however, they become more complex during close, combined arms battles.

The commander may list his critical tasks during commander's guidance as such: (1) Get "last read" prior to RP; (2) Alert supporting indirect fires 3 minutes out from ABF; (3) Initiate fires when seven tanks cross PL SAW/or OPFOR begins obscuration operations or if an OPFOR 1 and 2 mix close within 3500 meters of ABF Position 1; (4) Target priorities - smokers (if operating), T-80, or AT BRDM/BMP, 2S3/1, ADA; (5) Engagement

priorities per SOP; (6) Maneuver to alternate assault by fire position if 2 x 2S3/1 cross 47 N/S gridline; (7) Maneuver to alternate assault-by-fire position if 2/4 breaches eastern most obstacle belt; (8) Maneuver a team to supplementary assault-by-fire postion if an MRC (3/10) bypasses EA to north; (9) Fire targets AC0024 and AC0032 to support team maneuver; (10) Fire targets AC0025-AC0029 one minute prior to egress.

Focus from the commander allows subordinate leaders and integrated company planning cells to develop a clear task and purpose for each aircrew, determine what effects company fires must have, integrate complimentary systems, and refine company battle drills or "plays." During execution, commanders must maintain situational awareness to understand if and when their focus must change. Success or failure of a particular friendly COA or an unexpected OPFOR action or capability can quickly change the focus of the unit's direct fire plan. With a well-defined "what to shoot and when," the commander can then decide "how" to focus (distribute) the necessary fires given the systems he has available.

Distribute Fires

Observation: Crews executing the direct fire engagement do not know the primary focus of their fires, their alternate area of focus, or the role their fires play in achieving the commander's intent.

Discussion: "Left shoots left and long; right shoots right and close." Sound familiar? Regularly that short statement defines the company plan to distribute fires in the EA. What constitutes left and right? What separates close from long? The commander must provide clarity in the direct fire plan or unanswered questions such as these will continue to cause overkill of some targets while others maneuver from the EA unimpeded. The often used "left shoot left and long….etc." plan is a combination of two doctrinal methods (fire patterns and target array) described in FM 1-112, Chapter 3, Figure 3-26. However, the plan is never truly developed with necessary integrated terrain and OPFOR considerations like shape, size, and disposition of the OPFOR in the EA; definable portions of target array; or vertical relief of the EA terrain. Similarly, units often use the sector method with little or no integration of the EA terrain. Firing positions depicted on blank butcher paper with indiscriminate left and right azimuths as sector boundaries is another example of the normal detail often given fire distribution. Most direct fire plans simply fail to address the methods for distributing fires described in FM 1-112, Chapter 3, Figure 3-26. A simple yet detailed plan employing one or multiple methods of fire distribution will provide greater situational awareness and ensure all crews understand their task and purpose for systematically destroying the OPFOR's systems and capabilities. Simply put, a detailed fires distribution plan with task and purpose for each aircrew helps all crews understand "where" the commander wants the effects of their fires.

Shift Fires

Observation: Units fail to achieve the desired effects throughout the duration of the engagement because commanders fail to shift fires in response to changing battlefield conditions.

Discussion: Most companies do not develop a proactive plan to shift fires based on anticipated changes in battlefield conditions or OPFOR disposition and reactions. Furthermore, company commanders fail to shift fires during the engagement when their fires cease having the desired effects. The plan to shift fires must counter possible OPFOR reactions to company fires, indirect fires, and obstacles in the EA. Additionally, units rarely shift fires to counter OPFOR attacks against company positions or to facilitate maneuver to supplementary or alternate positions. The company can develop a plan to shift fires by wargaming anticipated OPFOR reactions in the EA during the engagement. Using validated and practiced company battle drills or "plays" provides an excellent base from which to build a shift fires plan and an extremely effective method for the commander to articulate his intent when shifting fires by command during the engagement. Commanders should rehearse not only fire commands but calls to shift fires or execute "plays" to ensure crews understand how the call will sound and how they will receive

key information. A proactive, rehearsed plan to shift fires is essential to effectively counter OPFOR actions in the EA and deny the OPFOR the chance to seize the initiative.

Fire Plan (All Crews Understand) and Rehearsal

Observation: Units fail to achieve massed fires because aircrews do not understand all elements of the direct fire plan. Additionally, aircrews complete the rehearsal without gaining a lasting mental picture of the sequence of actions within the fire plan.

Discussion: Too often, the rehearsal is the first pre-execution event cancelled when time becomes short. Similarly, if conducted, the emphasis of the rehearsal is often on en route tasks instead of focusing on critical events such as actions at the EA. Often, the rehearsal immediately follows the company mission brief with no time allowed for teams/crews to digest the mission information. Without time to review the plan, crews fail to become active participants and the rehearsal digresses to more dry recitation from the commander. The effectiveness of the rehearsal depends not on the detail of the terrain representation but on the crews' proficiency in reciting their task and purpose for each phase of the engagement. FM 1-112, Section 3-17, lists 17 questions that serve well to gauge the aircrews' understanding of the company's fire plan. The commander may also review the list to determine the completeness of the direct fire plan before briefing.

Additionally, many of the questions serve well as briefing items for aircrews during the scripted rehearsal. When all crews can effectively discuss the 17 listed points, they collectively have a strong mental impression of how the engagement will unfold and can identify all conflicts and elements of the fire plan requiring additional coordination. Crews with a well-developed mental picture of the fire plan have greater situational awareness, spend less time on the radio seeking guidance, and devote more energy to the crew tasks required to acquire and destroy the OPFOR. Furthermore, a well-understood plan provides a strong base from which the commander can disseminate changes with minimal communication and confusion. Company SOPs must detail how the company will execute the rehearsal. **FM 101-5,** ***Staff Organization and Operations,*** Appendix G, provides guidance on how the company can conduct a scripted rehearsal. At a minimum, crews must know the key times and actions they will rehearse, the sequence of events, and information they are to brief. Commanders must develop realistic timelines that permit crews to prepare for and conduct a detailed rehearsal, and then protect the time allotted. Lastly, validated company battle drills or "plays" allow the company to focus on critical tasks during the rehearsal rather than events common to every mission. Every company briefs "Occupy the HA per SOP," but then discusses the maneuver for some length. Developing, validating, and training frequently performed operations, such as IMC breakup, HA/FARP occupation, and team bounding, will cause "per SOP" to become a truly efficient and time-saving measure.

Summary

The first step in correcting difficulties with direct fire planning is to read and understand doctrine. Commanders and their crews must understand the eight steps of engagement area development, how the company's direct fire plan fits into EA development, the principles of direct fire planning, the characteristics of a good engagement area, and techniques for fire distribution. Once the company understands the science of their business, they must then conduct battle-focused situational training exercises or battle drills to gain proficiency. Commanders must break down their METL into executable blocks, and then develop SOPs or "plays" that will allow them to accomplish the mission. To have a valid SOP, commanders should: (1) Brainstorm or chalk-talk possible TTPs for accomplishing the task; (2) Rehearse possible TTPs on a terrain model; and (3) Execute STXs or battle drills to validate the TTP. Once the company accomplishes these three steps, they can evaluate which technique works best and then adopt that TTP as SOP. The unit must then drill these SOPs and "plays" during tough realistic training that integrates an uncooperative enemy, and follow up that training with an after-action review.

Tactics, Techniques and Procedures

1. Continuously review the principles of direct fire planning throughout mission planning and execution.
2. Integrate all available assets (fire support, CAS, ground elements observing the EA, obstacle plan) into the direct fire plan. These systems contribute fire power to help achieve the desired effects and aid in gaining/maintaining situational awareness.
3. Identify critical tasks that, if completed, will accomplish the mission within the commander's intent.
4. Use thorough IPB and wargaming to develop specificity in the direct fire plan, facilitate detailed rehearsals, and help gain/maintain situational awareness during execution.
5. Leaders must control fires and maneuver to ensure the company achieves the desired effects. Detailed trigger plans, maneuver schemes, assessment methods, and trained company "plays" will aide the commander in doing so.
6. Conduct scripted, task and purpose rehearsals focusing on the critical events necessary for mission accomplishment. Ensure aircrews actively participate and can clearly articulate the commander's intent for each assigned task. Rehearsals are not a "one-time, check the block" drill. FM 101-5, Appendix G, and **CALL Newsletter No. 98-5, *Rehearsals,*** clearly outline the importance of executing rehearsals throughout the planning and preparation portions of the operation.
7. Develop, validate, and train company "plays." Proficiency at these plays will aid maneuver during execution and facilitate command and control of the direct fire plan. Plays should focus on countering likely enemy reactions in and near the EA; often-executed operations such as occupation of HA, FARP, and AA; and standard company maneuver during mission execution.
8. The use of well-trained planning cells leads to more complete direct fire planning.✪

CHAPTER 6

AIR VOLCANO OPERATIONS AT THE NTC

by CPT Gregory A. Baker

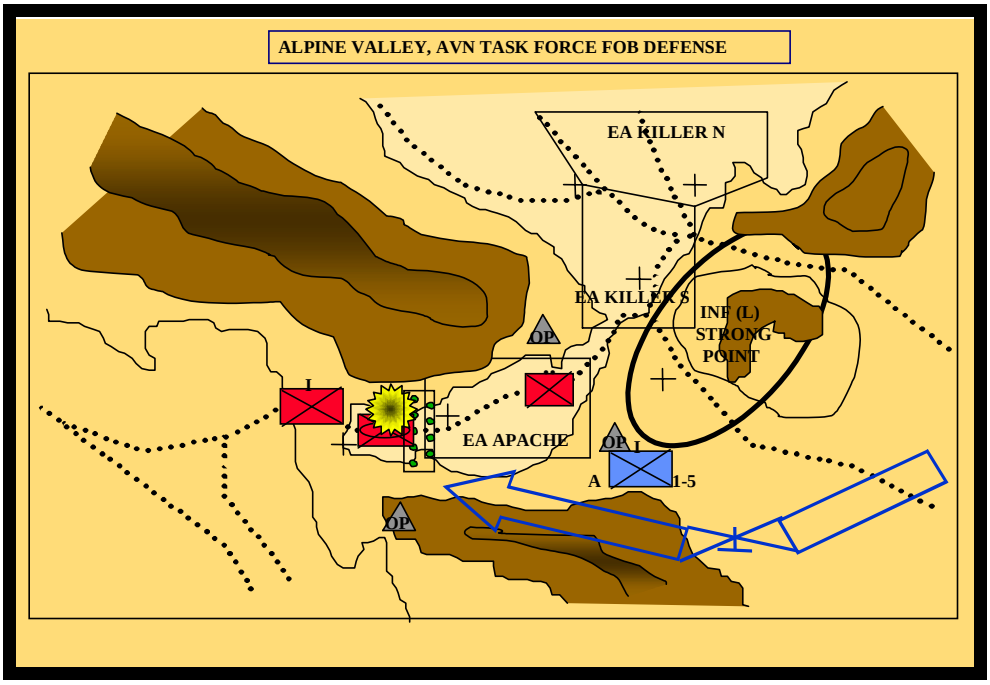
Air Volcano operations continue to be one the most dynamic aviation operations conducted at the National Training Center (NTC). It is a rare exception to have a brigade combat team (BCT) deploy to Mojavia (NTC's scenario name) without its supporting assault/utility aircraft bringing at least one Volcano system. In most cases units bring two systems into theater. So how has this combat multiplier worked? How have BCTs and aviation units planned what **FM 20-32, *Mine/Countermine Operations,*** says requires extensive pre-mission coordination and positive control during air emplacement? What detailed mission planning process should a unit use for missions that almost always go cross FLOT or to the forward edge of the battle area? Unfortunately, the air Volcano system is relatively new to combat support operations. Aviation doctrine (**FM 1-113, *Utility and Cargo Helicopter Operations***) outlines planning responsibilities at the division and aviation battalion level. Mine/countermine doctrine (FM 20-32) places planning responsibilities on the ALO, S-3 Air, engineer, and air defense officer. Additionally, countermine doctrine addresses the critical importance of developing triggers for employment. The question remains: How are units planning air Volcano operations? Does the aircrew execution achieve the desired results? Let us answer one of the questions upfront. How has the air Volcano worked as a combat multiplier?

Scenario #1

The mission: General Support Aviation Battalion (GSAB) employs a block minefield NLT 162000 Mar 00 from NV 263270 to NV 262273 in order to block the Alpine Valley AA from dismounted movement.

This mission is in support of an aviation task force (ATF) and a light infantry defense of the Leach Lake Passes complex. Initial ground commander's intent has the ATF establishing a forward operating base (FOB) in Leach Lake Valley with light infantry in support. The ATF conducts multiple missions, including the air movement of light infantry, establishment of a forward FARP to facilitate conducting attack operations deep in support of division, and operations in support of the light infantry's area defense. The infantry battalion S-2 identified a key mounted and dismounted AA that led through the Alpine Valley into the flank of the FOB and light infantry defense. To secure this AA, infantry and the ATF planned an engagement area, EA APACHE in Alpine Valley. Part of EA APACHE included an integrated Volcano minefield to seal the AA. The infantry engineer planned the minefield at the most restrictive point in the valley. One company from the infantry battalion placed OPs to overwatch the minefield, and TRPs were registered in support of the engagement area. The purpose of the minefield was to disrupt TF Destroyer recon elements from their FSE early in the evening of 16 Mar 00, while the second minefield sowed in the same location would block the main body from using the valley.

That night one of two UH-60As modified for Volcano operations landed at the base forward arming and refueling point (FARP), Dogwood, run by the ASB, and loaded the system. The aircraft departed the FARP and proceeded to the FOB to link up with the TAC and the TF S-3. The possibility of enemy contact caused the crew to displace to a Holding Area (HA) east of the FOB. While at the HA, SPOTREPs were passed reporting enemy vehicles at the entrance of Alpine Valley. The crew emplaced the initial minefield at 2000 hours, returned to the AA, and conducted a crew change out. As expected, TF Destroyer entered Alpine valley and discovered the



minefield. After a lengthy breach operation, the forward security element (FSE) moved into EA APACHE, where infantry waited. At 2200 hours, the second crew departed the assembly area, arrived at FARP Dogwood, and loaded a second set of mines. The Volcano aircraft repositioned forward to the HA near FARP Grapefruit and waited for the call to reseed the initial minefield. The standardization instructor pilot (SIP) walked to the TAC to conduct final coordination for the attack. SPOTREPs confirmed enemy vehicles in the Alpine Valley. This mission would have a dedicated suppression of enemy air defense (SEAD) package used to protect the aircrew while it ingressed between two enemy elements. At 0356 hours, a rolling SEAD package fell along the north wall ridgeline and in Alpine Valley. Four minutes later the volcano crew emplaced the minefield as the main body of TF Destroyer approached. At 0405 hours, a BMP, BRDM, and seven dismounts of the main body were destroyed in the Volcano minefield as what the enemy thought was a breached minefield had been reseeded just five minutes before their arrival. The block minefield had been laid in front of the main body of TF Destroyer. TF Destroyer's main body remained stuck in place for 20 minutes while they attempted to breach the block minefield. Fortunately for the Krasnoviaons (NTC OPFOR), the planned multiple launch rocket system (MLRS) attack upon TF Destroyer's main body was never fired.

Overall, a very successful mission. The infantry commander developed the ground tactical intent for the Volcano minefield. The aviation company developed a scheme of maneuver for emplacement of the minefield on the ground. The ATF developed an air movement plan, a pick-up and loading plan, and a staging plan to get the Volcano loads forward on the battlefield. The previous planning sequence should sound very familiar. In fact, it is laid out in detail in **FM 90-4, *Air Assault Operations.***

Air Assault Planning = Volcano Success

The air assault is a mission in which assault forces, using firepower, mobility, and total integration of helicopter assets, maneuver on the battlefield under the control of the ground or air maneuver commander to engage and destroy enemy forces or to seize and hold key terrain. **FM 1-113,** ***Utility and Cargo Helicopter Operations,*** states that the number of aircraft involved in an operation does not define the air assault.

Is an air Volcano mission an air assault? No, but the planning requirements and planning process for air Volcano operations or air assaults remain the same. Under the guidance given in FM 1-113, units must plan and execute the air assault operation, regardless of the number of assets involved, as a combined arms operation. Time required for planning may vary depending upon METT-T, but planning considerations should be the same. The air Volcano mission needs the same level of detailed planning that one sees for an air assault. The best air Volcano operations executed at the NTC have this level of detail because units are treating them like air assaults. The task now is to formalize this procedure into planning guidance and procedures that units can integrate into Home Station training and unit standing operating procedures (SOPs).

Like the air assault, the foundation of a successful air Volcano operation is the commander's ground tactical plan. What is the task and purpose of the Volcano target? How does the minefield tie into the BCT's obstacle plan? More importantly, how does the proposed minefield tie into the terrain and how does the commander on the ground want the minefield to look? All of the above are critical to the aircrew's execution of the minefield. Additionally, the ground tactical plan allows for the development of realistic triggers that prepare the system for deployment. Units must base deployment of the systems on triggers tied into the brigade's recon and security plan with overwatched NAIs and DPs. Once the aviation unit commander knows the ground commander's intent, the unit moves on to the landing plan (Volcano deployment plan).

Ground Tactical Plan:

- **Scheme of maneuver**
- **Graphic control measures**
- **Missions of supported task force**
- **NAIs, DPs**
- **Trigger**

Route Planning:

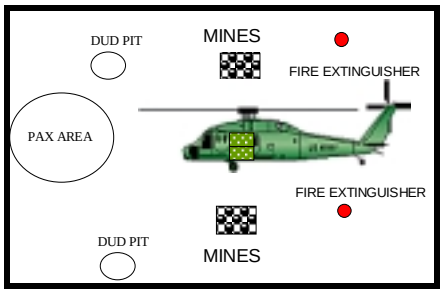
- **Support deployment plan**
- **Do not interfere with ground action**
- **Minimize enemy observation and target acquisition**
- **Allow fire support**
- **Use terrain and time**

The Volcano deployment plan must support the ground tactical plan, such as the landing plan in an air assault supports the ground tactical plan. The crew must know the type of minefield (disrupt, turn, fix, or block) and the control technique used to support the minefield deployment (visual identification, time lapse, canister countdown, and GPS/Doppler guidance). Additionally, an initial point (IP) needs to be chosen that will both support the actual minefield deployment and protect the aircraft and crew from direct observation. Important to remember is the point that the air Volcano is not a bomber aircraft flown over the top of approaching enemy formations. Aircrews that fly in bomber profiles do not survive to see the next day's fight. Utility aircraft units need to maximize the use of terrain-based products to enhance their mission planning to include AMPS, ASAS, Terrabase, and any other mission planning systems available. The next step in the planning process is the air movement plan.

Very seldom is just one minefield planned in support of the BCT's scheme of maneuver. The range of planning options for an air Volcano minefield has run the gamut at the NTC from twelve different minefields to just one. At no point should a unit plan to execute more than three air Volcano minefields per system, per mission. Once a staff verifies minefield targets, they should develop tentative flight routes to control, protect, and sequence the Volcano aircraft into its deployment areas. Again, units should apply the same flight route characteristics outlined in FM 90-4 during the planning process. Of critical success to the mission is the integration of SEAD planning along the flight route.

Coordination now shifts to the loading plan. This phase of the planning is separated into two areas of focus. First area of focus is placement of the system in the AO (aviation AA, brigade, HAs) that will give the commander the flexibility to execute the air Volcano mission. This is of critical importance, especially when working with a four-hour duration minefield. The NAIs, DPs, and associated triggers for employment are backward planned to develop the timeline to not only posture the system forward in the brigade's sector, but to initiate appropriate REDCON levels for deployment. Second area of focus is the logistical requirement to upload mines on the system. The most flexible and fastest means of uploading is integrating the procedure into FARP operations. Moving the system to an engineer unit and transloading the mines from a ground system to an air system requires more time.

Staging operations focus on the unit coordinating for the supply of the mines. Volcano mines are in limited numbers and will be under a restricted supply rate. Units must coordinate pick up and transport of the mines. The best transport used at the NTC is the HEMMT Cargo. Otherwise, a forklift works well to move the mine's honeycomb packaging. Whether using an aviation FARP or an engineer resupply point, removing the mines from the honeycombs and uploading the mines on the Volcano system is labor intensive. Staging the air Volcano system is time consuming, and aircrews must accomplish this well in advance of expected deployment times. Units need to develop a standardized Volcano upload point that provides rapid response time whether it is the aviation unit or an engineer unit conducting the upload.



Air Volcano Planning Steps:

- **Ground intent for minefield**
- **Mine deployment plan**
- **Air movement plan**
- **Loading plan**
- **Staging plan**

Planning for air Volcano operations now falls into five easy steps: ground commander's intent for the minefield, mine deployment plan, aerial movement plan, loading plan, and staging plan.

What other critical issues are units addressing or not addressing in the conduct of and planning for air Volcano? Let us take a look at another mission flown at the NTC.

Scenario #2

Mission: On order, GSAB emplaces Volcano minefields to disrupt and block AAs, allowing the ATF and the 1st BCT commands to shape the battlefield.

Planning for this mission was complicated. The first mission planned was in support of a covering force battle against the attacking Krasnovian regiment. It used detailed terrain analysis to support the battle. Using both All Sources Analysis System (ASAS) and Maneuver Control System (MCS) products, the unit developed two minefields that would support the battle by denying the Colorado Wadi system and forcing the OPFOR into the open where AH-64As could destroy the regiment. Unfortunately, the planners did not link NAIs to decision points (DPs), nor did they develop well-defined triggers for the mission. That night the air Volcano aircraft arrived at the FARP only to find no Volcano ammunition on hand. Two hours later the ammunition arrived, putting the overall plan four hours behind schedule. After uploading the system, the crew moved to a holding area outside the FARP.

The order to execute the obstacle was given, but there were conflicts in the Army airspace command and control (A^2C^2) plan from the attack and cavalry aircraft flying that night, thus preventing the launch of the Volcano Bird. The trigger was missed and the OPFOR moved into the Wadi system. The aircrew now defaulted to the contingency missions planned by BCT. The brigade engineer planned five different minefields. To support this effort, the aircrew loaded data loader cartridges of the Aviation Mission Planning System (AMPs) and Doppler/GPS with the contingency minefield initial points (IPs), start points (SPs), and release points (RPs), and the A^2C^2 structure. An execute order was given to place a disrupt minefield. The unit planned this minefield for the Valley of Death and in support of a TF comprised of heavy and light forces. While en route, the aircraft received updated reports advising of enemy contact in the Valley of Death. Just after turning inbound from the IP, the aircraft was engaged by direct fire from T-80s breaching the main obstacle belt. The air Volcano crew immediately aborted the mission. One hour later, the crew was again sent out, this time to a hastily planned minefield located in Red Lake Pass. This minefield was not one of the original five planned minefields. Only an SP and RP were given; the aircrews chose an IP they felt would support the mission. On ingress to the RP, the aircraft was shot down by a BMP.

Unfortunately, too many missions occur this way. What happened in the last mission sequence? Where did the unit go wrong? There is no one single answer except to say it was a series of mistakes, all focusing on coordination issues. How does a unit overcome these problems?

Once the unit selects a course of action which identifies the need for the air Volcano system and issues a WARNO, the aviation unit specifies a location and time for an initial planning conference. Minimum attendance at the initial planning conference should include the brigade engineer, S-2 representative, S-3 Air, aviation LNO, FSE, AMC, and aviation battalion S-3. At the initial planning conference, participants exchange critical information, to include locations of planned minefields with commander's intent, initial triggers, and timeline; they identify locations of loading and staging areas, a tentative air movement plan, a fire support plan, a deception plan, abort criteria, and a communication plan. Once the initial planning conference is complete, the aviation staff takes the information back and the five-step planning process begins. During planning, the aviation S-3 maintains positive communications with the aviation LNO and finalizes any outstanding coordination issues with the BCT. Critical areas of focus during this phase include refining triggers for employment, airspace deconfliction, and fire support planning. Once planning is complete, the aviation S-3 backbriefs the aviation LNO who conducts an AMB at the brigade. The planning process continues with incorporation of the Volcano plan into the aviation battalion's overall plan. The unit publishes its OPORD, conducts the aircrew brief, and finally rehearses from the aircrew through the fire support channels to the brigade. Rehearsing air Volcano triggers and deployment criteria is critical. Finally, the aviation commander conducts condition checks to ensure all criteria is met for mission success.

Conclusion

Air Volcano missions will continue to play a major part in brigade-level operations, not only at the NTC but also across the Army, as TFs deploy to support contingency operations. It is important that units develop planning techniques that are efficient and will facilitate the detailed planning required to complete a mission which needs extensive pre-mission coordination and positive control during air emplacement. A planning technique is already in place that will facilitate air Volcano operations. The five steps of the air assault planning process are well known and easily integrated into a planning process. Units that focus on the ground commander's intent for the minefield and an aerial air movement plan, loading plan, staging plan, and mine deployment plan will be successful. Additionally, the use of a set planning process with WARNOs, initial planning conferences, AMBs, battalion orders, and air crew briefs and rehearsals, plus close coordination between the aviation battalion and BCT aviation LNO will prevent lapses in coordination. The air Volcano system is an excellent combat multiplier. The use of aerial delivered scatterable munitions gives ground commanders great flexibility in the conduct of operations. With proper planning, the air Volcano system will continue to be a major player in force-on-force operations.

Tactics, Techniques and Procedures

1. **Planning.** Separate Volcano planning into the five plans of an air assault. Most UH-60 units are familiar with this format and it covers all required items.
2. **Triggers.** Establishing ground commander's intent and developing triggers to support the deployment during MDMP are critical. While planning, strong LNOs are only effective if they understand the air assault planning process and the required coordination necessary through mission execution.
3. **Briefing Process** (WO, initial planning conference, OPORD, crew brief, rehearsals). LNOs must understand their requirements and how to plan. Ensure all participants understand and review the details of the mission.
4. **Logistics.** Unit MTOEs are not set up to transport Volcano mines, so outside support is necessary. Establish relationships as early as possible to coordinate how mines will get to aircraft.✪

CHAPTER 7

AERIAL INSERTIONS TRENDS AT THE NTC

by MAJ Michael T. Alexander

A trend seen at the National Training Center is that aerial insertions are not receiving the support needed to ensure mission accomplishment. Units regard them as taskings to the aviation unit in support of the maneuver brigade, rather than a combined arms operation with all the detailed analysis, coordination, planning, and rehearsals that this entails. Any aerial insertion beyond the FLOT should have the same significance as an air assault.

Aviation units frequently insert three basic brigade elements: COLTs (combat observation laser teams), ETACs (enlisted tactical air controllers), and brigade scouts. These are all brigade assets and, more often than not, a very important part of the brigade's scheme of maneuver. Therefore, they deserve the most detailed planning that time will allow. The most common trend is the failure of units to set the conditions (fire support; situational awareness, both friendly and enemy; abort criteria; extraction plan for both the team being inserted and the aircrew; command and control; and FARP operations) for mission accomplishment. This article will briefly review each condition, trends, and possible solutions.

Fire Support

Suppression of enemy air defense (SEAD) too often falls into the "too hard to do" category, is forgotten in the planning process, or misunderstood by the staff and poorly planned. While SEAD is very challenging to plan and execute, without it a cross-FLOT operation is at increased risk for failure. METT-T will determine the proper amount, type, and employment method for SEAD. Too often units think that they have to destroy an ADA system to have a successful SEAD mission. At unit AARs, the NTC's OPFOR ADA commander consistently reports that this is not the case. Units need to explore what type of SEAD is available, appropriate, and adequate for the mission. A suppression mission to keep the ADA system in check while the aircraft passes through the effective range of the system is mission accomplishment. Nonlethal SEAD can also be extremely effective. If you can jam the enemy's radar and command and control frequencies, you can effectively take away his eyes and ears.

Situational Awareness

Situational awareness is essential to mission success. Without knowledge of the scheme of maneuver (why the insertion is occurring), the aircrew is executing the mission in the blind. It is also very important for the aircrew to receive the S-2's most current intelligence update. Without this condition check, the unit should seriously consider aborting the mission. This is an invitation for an aircraft to be shot down and lost along with the aircrew, passengers, and equipment. Even worse, it is a recipe for fratricide. One proven method for aircrews to attain maximum situational awareness is to involve them in mission planning. This does not mean the aircrew plans the mission instead of the staff. It means timely and effective staff planning, specifically issuing solid orders, and allowing the company or troop an appropriate amount of time to execute proper troop-leading procedures. It means conducting the Military Decision-Making Process (MDMP) efficiently to give commanders, at all levels, the most information possible at the proper time so they can make informed decisions on the mission. A good format to

follow is the air assault planning procedures outlined in **FM 90-4, *Air Assault Operations.*** If you treat an insertion like an air assault, it will receive proper, detailed planning and become a successful, coordinated action.

Abort Criteria

Abort criteria is critical because we do not want to reinforce failure. If a unit loses aircraft to enemy weapon systems, there has to be a point when the chain of command decides to initiate an alternate course of action. All tactical situations are unique and various units have different SOPs, but all units must establish such a decision point. The commander, using his experience and recommendations from his staff, sets that condition and determines the least amount of assets required to accomplish the mission and any contingencies. Too often units do not brief or explain abort criteria in orders or rehearsals, and the result is the loss of invaluable assets for follow-on missions.

Extraction Plans

Extraction plans are critical in more ways than one. Aircrews want to know that if shot down, someone is going to come and extract them. They want to know that there is a specific plan, briefed and rehearsed, to accomplish this mission. The same goes for the ground element. They will find comfort in knowing they are not expendable and that there is a plan in place to extract them, with specific personnel and equipment identified to extract them if the OPFOR becomes a factor. A trend is that a finite number of aircraft are available for mission support, and aviation units create more mission requirements than they can adequately support. Consequently, when establishing priorities, units cancel internal support missions first. A solution is to make the commander and liaison officer at the supported unit understand how many aircraft and aircrews are available and what missions they can perform. This can only help the ground unit plan more effectively.

Command and Control

Command and control, with extended lines of communication, is essential to mission success. Everyone understands the need to communicate with aircrews during missions. However, another trend at the NTC is to overlook how far the aircraft is actually flying or to conduct poor terrain analysis of the route of flight for communication line of sight. Terrabase analysis can help determine when and where to establish a retransmission site or possibly a ROZ, to employ a command and control aircraft to maintain communications for the duration of the mission. The ability to communicate between aircraft executing the mission and their command and control element is critical. This allows the unit to control SEAD, to gain real-time intelligence from the aircrew, to change to alternate routing based on other available intelligence, and to initiate a recovery operation, if needed.

FARP Operations

The greatest potential for an accident is at the FARP. Many units overlook the numerous considerations for successful FARP operations (FARP layout, marking, landing direction, traffic patterns, go-around plan, emergency actions). The most overlooked items are briefing and rehearsing FARP operations to aircrews. Even while conducting day operations, the NTC offers abundant sand and wind to challenge this operation. At night, FARP operations become more difficult. How many aircraft will cycle through at the same time? Who has the priority? Is there a mix of different airframes (UH-60s with AH-64 security)? Do the aircraft all receive fuel from the left/right side, or are they different? The answers to these questions seem obvious: put more emphasis on getting FARP plans briefed and rehearsed. Disseminate sketches to the aircrews, and ensure any updates and/or changes are briefed.

Conclusion

The answers to the issues raised in this article begin with increased emphasis in the detailed planning of the mission. Units can address many mission issues at Home Station. Conduct an initial planning conference prior to deployment. This involves getting all the participants together and reviewing the plan to establish all the conditions discussed previously. Develop checklists and SOPs that save time. Additionally, ensure that the liaison officer understands the requirements for an insertion and has a way of tracking combat power so that he can intelligently speak for the commander at his level.

Tactics, Techniques and Procedures

1. **Fire Support.** Begin planning fire support as soon as you receive the mission, with or without an assigned FSO, and the earlier the better. Educate the staff on the capabilities of available field artillery units.

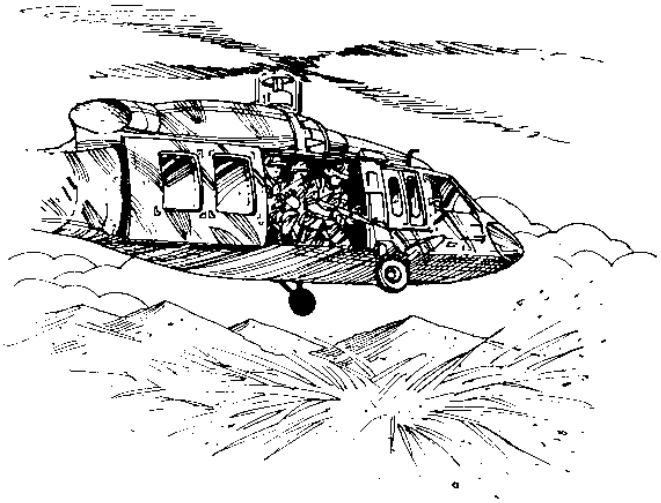
2. **Situational Awareness.** Involve operators in all mission planning. Detailed planning, briefings, and rehearsals sound obvious, but units often do not execute them.

3. **Abort Criteria.** Manage risk carefully, forecast potential future missions, and determine the unit's priorities. Establish the conditions for success.

4. **Extraction Plans.** Take the time to plan an extraction plan. Soldiers will work harder to make the mission successful if they believe they are coming back. Also, have a good communications plan for contacting LNOs.

5. **Command and Control.** Seemingly obvious, but often overlooked. Involve the SIGO in the planning process. He may be able to coordinate alternate means of communication.

6. **FARP Operations.** Do not take FARP considerations for granted. Again, everyone knows how to do this, but not everyone briefs and rehearses actions at the FARP.✪

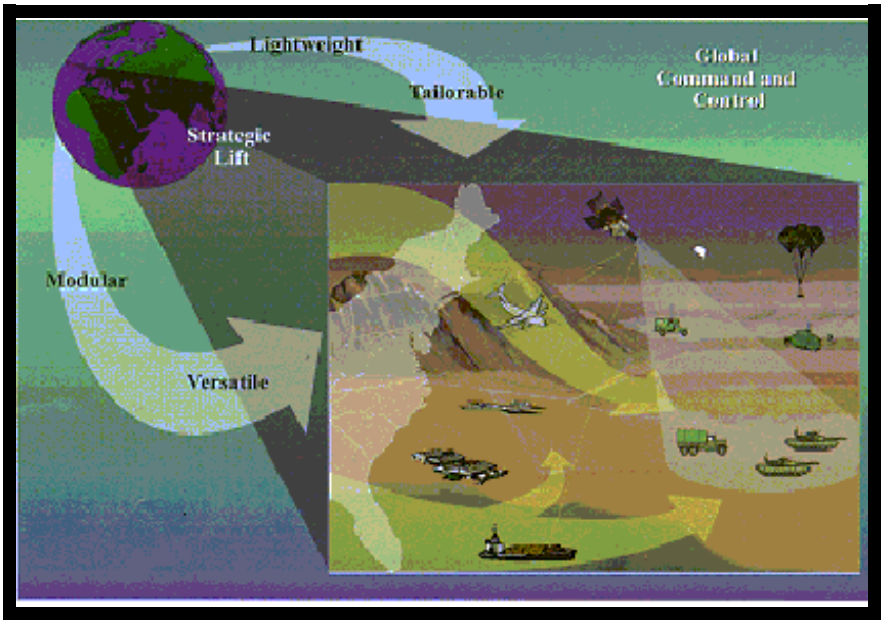


CHAPTER 8

COMMAND AND CONTROL FROM THE AIR
(Employing the UH-60 Command and Control Console)

by CPT Robert T. Ault

This article examines some of the major trends observed at the National Training Center (NTC) in regard to UH-60 command and control planning and execution. Three specific trends are: airborne command and control planning, pre-combat checks, and pre-combat inspections. The use of the command and control aircraft in this article applies to its employment in support of the brigade task force. The console is certainly capable of being used to command and control the aviation task force, and the basic principles are the same. The command and control UH-60 provides the brigade or regimental commander with a powerful tool from which to conduct operations.



Observation: Enhanced flexibility.

Discussion: Because of its altitude above the battle space, the command and control UH-60 can talk across greater distances than ground-based command and control equipment. Additionally, if the aviation company has other command and control modified aircraft, the console can be moved between aircraft within 20 minutes. The 15C-model console allows the commander to communicate across the full spectrum of radio nets -- FM, VHF, UHF, HF, and TACSAT. The system also allows scanning of the above nets as desired. Unfortunately, the UH-60 command and control aircraft is a combat multiplier that is often used only as an afterthought. The "command and control bird's" capabilities are often neglected or inadequately planned at several levels within the brigade task force.

Airborne Command and Control Planning

Observation: Key personnel in the BCT for command and control planning.

Discussion: One of the major trends observed at the National Training Center is the lack of a command and control plan that integrates the console aircraft. Key personnel needed for the employment of the system are: the brigade commander, the brigade and aviation task force S-2, the aviation task force S-3, the aviation liaison officer (LNO) at the brigade combat team (BCT), the aviation task force signal officer (SIGO), and the command and control platoon leader.

The primary planning consideration is the ground commander's intent for command and control during the fight. For example, when can the commander afford to break station in order to refuel or swap aircraft? The enemy situation is the next consideration. Does the brigade task force have air superiority? Will the threat allow placement of high altitude ROZs, or will the aircraft have to perch on high ground in order to avoid the threat? These questions are two central issues that must be answered in order to execute a successful command and control mission.

Observation: Aviation task force planning.

Discussion: Once the brigade commander gives his intent and the threat is considered, the aviation task force now takes control of further planning. It is critical that the employment of the console becomes seamless to the brigade commander and his staff or it will quickly fall into the "too hard to do" block when the OPTEMPO increases.

The aviation task force S-3, in close coordination with the aviation LNO at the BCT, must submit timely restricted operating zone (ROZ) requests. A trend is the failure to plan for multiple ROZs in support of different phases of the ground tactical plan, or to request them far enough in advance of the mission. Multiple ROZs provide flexibility to the command and control aircrews to re-position to best support the brigade commander or adapt to a changing threat; however, since ROZs are normally above a coordinating altitude, airspace deconfliction with other friendly airspace users must occur. This failure results in the late request for the ROZ being denied by the air operations cell. The best technique is to learn the cycle for the airspace coordination order (ACO) for the theater.

The command and control platoon leader must know how long his crews can fly under all conditions. He must communicate this capability or limitation to the aviation task force S-3 and BCT aviation LNO. The command and control platoon leader must also understand the level at which he provides support. If at all possible, once the command and control platoon leader receives the WARNO from the aviation task force S-3, he should make contact with the aviation brigade LNO. The command and control platoon leader must clearly understand what the brigade staff will bring with them and what they expect to be present on the map board of the console. Additionally, critical times and locations of pick up and drop off are confirmed with the brigade LNO.

The command and control platoon leader and SIGO must begin necessary movement early. The aviation SIGO, like the general support commander and command and control platoon leader, must take ownership of the effective operation of the console. The use of a command and control aircraft in support of every brigade task force mission should be SOP and expected by the BCT commander as well as the aviation task force SIGO and command and control platoon leader. These two critical players must begin necessary movement after receipt of the WARNO. The SIGO must begin building the loadsets, or frequencies, to support the mission. Usually in the BCT the aviation SIGO is the only one with the computer hardware and software capable of producing the loadsets for the console. Finally, and this point is as important as any other, the pilot-in-command must attend the brigade OPORD and rehearsal while the copilot prepares the aircraft.

Observation: Solid console operation skills are critical to handle the unexpected during console operations.

Discussion: The console itself is relatively easy to interchange between console-modified aircraft. Knowledge of this task is not only preferred, but also necessary. A well-coordinated command and control platoon sergeant and crew are able to give the brigade commander more redundancy if an additional console is not available.

The general support company commander must take an active role in the readiness of his command and control consoles. In most divisions, these consoles are precious commodities. The time to maintain them and train aircrews is not just prior to mission, but at Home Station. Often the unit is not proficient and misjudges operator error as equipment failure.

Most of the time, units lack enlisted aircrew members. This shortage precludes the use of crew chiefs, electronic repairmen, or any other MOS that could act as console operators. The trend from successful units at NTC is that they have invested time to train one to three console operators. However the aviation task force chooses to fill this need, competent console operators are a must. This is a natural leadership role for the aviation SIGO.

The aviation SIGO, along with the command and control platoon leader, should provide the necessary training. A successful command and control console mission depends on a fully trained and practiced console operator who knows the capabilities and limitations of the system and can trouble-shoot it in the air.

Observation 5: Command and control relief-on-station must be planned and rehearsed.

Discussion: The last critical event to plan is the swap-out or relief-on-station of the command and control aircraft, if necessary. A critical task for the command and control platoon leader is to build redundancy into his command and control operation. A trend is that units do not plan for a pre-flighted, ready to launch, back-up command and control aircraft. This should be automatic. The command and control platoon leader should build in this redundancy because the brigade commander's plan rests on his shoulders. The command and control platoon leader must be able to react to any contingency or changes in the planned timeline once the mission begins.

Depending on the distance to the ROZ and environmental conditions, the command and control aircraft (with full external fuel tanks) can stay on station in the ROZ an average of six hours. Units should use a time limit, such as this, to build a command and control swap-out plan. Something to consider is the location of the swap-out relative to any other ROZ. Timing is critical to any command and control change out: when, during the battle, can the commander afford to hand over the battle to his TAC. This may require the first command and control aircraft to be on station for only four hours, followed by a second aircraft for six hours. Often, the most responsive technique is to have the second aircraft on standby at a set time after the first aircraft is set in the ROZ. Inside the constraints of the aircraft, the decision to swap-out the command and control aircraft is the commander's.

The most common location for a command and control swap is the forward arming and refueling point (FARP). This works well because the passengers must deplane in order to refuel the system. A second, waiting, command and control aircraft at the FARP allows the brigade commander to be on the ground a minimal amount of time.

Pre-Combat Checks

At the aviation task force level, pre-combat checks (PCC) for the brigade command and control mission include the verification of any airspace coordination, proper loadsets, and critical times from the brigade.

Observation: Command and control aircrews must know the mission and the system.
Discussion: The command and control platoon leader must ensure that every aspect of the mission has been prepared. His crews should completely understand the mission, but more importantly they should have a solid grasp of how to use the equipment on board the aircraft.

If the brigade commander will be in the back of the aircraft without the aviation commander, the role of the console operator is heightened. He must be able to teach the commander and staff the skills necessary to operate the console. Units should accomplish this well before launch time, almost as static load training. The command and control mission is far too important to be guesswork, or to have a commander that is not talking on the right nets because he is using the wrong "push to talk" button.

At the crew level, PCC must include setting the times on both the console and the radios in front of the helicopter. Preflight of a second standby aircraft is a necessity. This allows a minimum break in the timeline should something go wrong with the initial aircraft that precludes it from taking off. The pilots must have prepared maps with all pertinent graphics and a detailed communications card as well.

The command and control platoon leader must give his crews all information he has concerning the mission. It is essential that the aircrews have a working knowledge of the brigade's mission. Having an informed aircrew flying the command and control aircraft adds to the capability of the platform. Workload permitting, the aircrew should be able to monitor nets and accomplish tasks delegated by the commander. This is a great combat multiplier to a busy commander in the back, and a function of workload aircrew coordination and training among the command and control aircrews. It is also a skill that units should develop and practice, though never at the expense of aircraft control.

Pre-Combat Inspections

Observation: Checks and balances.

Discussion: Pre-combat inspections are a leadership function. Leaders checking systems and soldiers. Good units do this at all levels. The same applies to the command and control mission. Leaders must check and ask questions: What map is in the back of the console? Where is the ROZ? Is the airspace approved? What is the minimum weather? What graphics will the aircrews need in 4-8 hours from take off?

Conclusion

The command and control UH-60 is a very capable combat multiplier, but only if planned. The 15C-console system offers the commander a wide array of capabilities that are unavailable with a ground-based system. Since line of sight greatly increases the radio's capabilities, commanders have access to a wider range of information than from the ground. To effectively exploit these capabilities, the staff must conduct command and control planning. Key personnel throughout the BCT provide essential information to ensure a successful command and control mission. Aviation staffs must work to make use of the command and control UH-60 easy for the brigade commander. This includes everything from conducting up-to-the-last-minute coordination with the brigade S-3, to developing a comprehensive console-training program at Home Station. The command and control UH-60 is a responsive and capable command and control platform when properly used. Leaders must take the lead in ensuring it remains effective.

Tactics, Techniques and Procedures

1. Units should develop a console-training program that includes training operators on all aspects and capabilities of the console.
2. When conducting mission analysis, the use of the airborne command and control console should be considered by staff elements from the BCT on down.
3. Requests for airspace, such as a ROZ for the command and control aircraft, must be planned for and requested well in advance of the ACO orders process.
4. The aviation SIGO must take ownership and responsibility for the success of the command and control aircraft's mission.
5. A member of the aircrew (PIC or PI) should attend the BCT or aviation task force rehearsal in order to gain situational awareness.
6. Relief-on-station between command and control aircraft must be planned and rehearsed.✪

CHAPTER 9

SUSTAINING COMBAT POWER IN THE DESERT

by CPT James J. Cutting

Introduction

Combat power -- this term means different things to different people. To the aviation maintenance professional, it translates into mission-capable aircraft. Simply put, the commander cannot conduct the mission without the aircraft. Aviation maintenance managers must ensure that this most critical facet of combat operations does not impede the unit from achieving success.

Maintenance operations in any field environment are challenging. A high operations tempo means that the unit needs more aircraft to fly more missions for longer periods of time. This tends to drain available assets in the form of people, parts, tools, and time. Also, tactical considerations may take maintainers away from their primary MOS duties to perform other critical functions of field operations such as preparing defensive positions. Desert conditions, with its heat and sand, only serve to compound the challenge presented to maintenance managers to keep the commander in business.

The desert sun will tax aircraft maintainers to their limits. If the majority of aircraft missions are flown at night, then mechanics must perform the majority of maintenance during the heat of the day. A maintenance manager must anticipate mission requirements and balance them against both the long- and short-term capabilities of the troops. Not only will increased mission load add to the list of maintenance requirements, but heat will also increase the time to complete a given procedure. Sand erodes rotor and turbine blades and bearings, causes electrical circuits to fail, and often forces pilots to land with a greater rate of descent than normal, increasing wear and tear on aircraft landing gear. Extreme desert heat will melt rubber erosion guards and severely limit the effectiveness of maintenance personnel. So how does the maintenance manager deal with these challenges? We will examine this topic through the three phases of any operation: planning, preparation, and execution.

Planning Phase

This phase begins at Home Station. The AVUM commander from the unit comprising the TF headquarters will normally be the singular point of contact for organizing the maintenance assets, and is the one person responsible for the planning, preparation, and execution of the maintenance mission. The AVUM commander must consider how to organize and coordinate the people, parts, tools, and time needed in the field during the predeployment phase of the operation. He needs to ask the following questions: (1) How many people will we need? (2) How will AVUM assets be task organized from outside our organic unit? (3) How will parts be requisitioned and transported to our location? (4) What special tools will we need? (5) Will the desert environment place more demands on specific areas? (6) How long is the operation anticipated to last? (7) How long will we be without support? Answer these questions and ensure that coordination is complete. Failure to do so will result in duplication of effort, confusion of priorities, and worse, lack of capability to efficiently conduct the maintenance mission.

Are soldiers trained? The tendency for most units is to concentrate almost exclusively on MOS skills at Home Station. These skills are obviously very important, but a commander cannot afford to ignore individual soldier skills once the unit is in the field. During the busiest flying schedule that the unit will experience, the result may be a delay of real-world maintenance to perform individual soldier training. Ensure that troops know how to dig fighting positions and erect camouflage nets. During an actual or simulated aircraft recovery is not the time to start familiarizing the DART on the use of the recovery kit. At Home Station, a little effort toward training individual soldier skills will pay big dividends in the field.

For what parts can an AVUM commander anticipate a requirement? If the PLL/ASL is strongly demand supported, then the commander may have an answer, but the environment to which the unit is deploying will require the commander to tailor his package. The desert will require that some components are changed at shorter intervals. Anticipate replacing rotor blades and tip caps, sensitive electronic components, landing gear, windshields (especially for UH-60s), filters, and possibly engines. Units should bring as many of these items, as well as associated hardware, as they can carry. If the unit cannot carry all the items, the support unit can bring them to the field and they will be readily available.

It is inevitable that a part will be needed that is not on hand. A question for commanders: How comfortable are you that your support unit will pass the requisition and deliver the item without delay? A liaison will be invaluable for this purpose. Use liaisons with all units that are directly supporting you and give them clear priorities. Set them up with vehicles and communications and you will never wonder whether or not a part is lost in the system.

The planning phase does not end when a unit leaves Home Station. At the receipt of each individual mission, the commander must analyze it and establish priorities for the aircraft maintainers. He must consider the following questions in order to meet the mission: How many aircraft are required? Is a maintenance support (contact) team necessary? Do aircraft need armament changes?

Preparation Phase

The maintenance manager's mission is to provide the commander with the maximum number of mission-capable aircraft when the commander needs them while managing limited resources. The key to success is preventative maintenance, which will not only prolong the life of aircraft components, but will also lead to early detection of faults.

Good preventative maintenance begins with the pilots. Accurate logbook entries and a thorough and comprehensive post-flight inspection are the first steps in setting daily maintenance priorities. If this information is incomplete or false, then maintenance managers will be operating in a vacuum. The crew chiefs are the next line of defense. Because pilots may land during hours of darkness and may be in a hurry to debrief their mission, the crew chiefs must do an additional aircraft inspection. Most aircraft maintenance manuals do not require this "daily," but performing them will pay big dividends by detecting and correcting faults before the aircraft are needed for the next mission.

Concentrate not only on grounding conditions, but on potential problems. Maintainers should inspect all rotating parts for erosion and clean particle separators to allow a clean flow of air. Clean everything! All bearing surfaces and electrical connectors should be free of sand and dust. (A small electrical vacuum with a portable generator is effective for this task.) Note any potential problems so that action can be taken.

Rotor blades will show erosion over time. If preventative action is not taken, then the component will require replacement before long. One method of preventative maintenance, blade taping, requires extensive time to apply and to track and balance the rotors. Painting the blades requires extensive repetition, and its effectiveness is not long lasting in a sandy environment. Once damage is evident, repairing the damage with adhesive may be a feasible solution. In some instances, it may be necessary to use adhesive as a sacrificial layer before the damage is done. If the maintenance manual for the aircraft does not allow repairs of this type, coordinate with the AMCOM LAR to attempt a nonstandard repair. "Scarf joints" on OH-58D main and tail rotor blades are very susceptible to erosion, and the use of adhesive filler will greatly prolong the life of these blades.

Also during this phase conduct rehearsals. A thorough rehearsal will bring together all working parts of the plan and help to identify any shortcomings. This is extremely important to accomplish before a CSAR/DART mission. It is best to perform this vital action with all personnel involved, to include aircrews and TOC personnel. Load the actual team members and their equipment on the actual aircraft they will use. Does it fit? Will it fit if this same aircraft is used to extract wounded? Conduct several different scenarios (contingencies) to ensure all team members understand how to react. A thorough rehearsal will greatly increase chances for success.

Execution Phase

Now comes the important part. If planning and preparation were done properly, then the execution should fall neatly into place. However, the maintenance manager must remain flexible and retain the ability to react to unforeseen problems. Is there a maintenance support team on-site supporting the launch of the aircraft? All too often, it is just the crew chief. If an aircraft has a maintenance problem on the ground, how does the pilot communicate that to the maintainers? An avionics repairer examines the aircraft, and his troubleshooting determines that a part needs replacement – is it on hand, and if so, who has the keys to the connex? SOPs should address these items, and soldiers must follow them.

When all of the aircraft do get off the ground, what is the plan if one gets shot down? Who triggers the action? The answers should be readily apparent at this stage, because during planning and preparation this scenario should have been addressed. In any case, tie the rescue of the downed aircrew with the recovery of the downed aircraft.

Following is an example of a CSAR/DART execution. The TF S-3 determines that it is tactically feasible for a rescue and triggers the CSAR. The CSAR should have a security force, medics, and an aircraft assessor. While the medics are tending to any injured crew members, the assessor is noting any damage to the aircraft and is classifying that damage into one of three recovery categories: on-site repair followed by a one-time-flight, recovery by aerial slingload or ground vehicle, or a catastrophic loss. This information is passed to the TF via radio while the rescue aircraft transits injured aircrew members to the appropriate medical facility. The DART takes this information and gathers all necessary materials and personnel to execute aircraft recovery. Once recovered to a secure area (i.e., the aviation assembly area), the unit may use BDAR techniques to return the aircraft back to the commander as combat power.

In a real combat scenario, it is logical to anticipate that the majority of aircraft recoveries will occur via aerial slingload because something shot the aircraft out of the sky and it then impacted the ground. In general, aerial slingload is faster than any other method of recovery and, if executed properly, affords a minimum amount of risk of further damage to the aircraft. Accordingly, it is of vital importance that units train their recovery crews on the use of the recovery kit in all conditions.

Conclusion

The role of the maintenance professional is critical in all combat aviation operations. A unit that is struggling with its aircraft availability cannot train or be effective on the battlefield. The success or failure of a unit begins and ends with the quantity and quality of the aircraft it takes forward. In the sand and heat of the desert, the job becomes harder, but the objective remains the same: build and sustain combat power for the commander.

"Life be hard in the desert." This statement is especially true for aviation maintenance personnel, but leaders who take the time to carefully plan, thoroughly prepare, and aggressively execute their critical role in the operation will undoubtedly be successful.

Tactics, Techniques and Procedures

1. **Individual Soldier Skills.** Are the unit and the soldiers prepared to execute all tasks? Can forecast maintenance requirements be met and still support guard duty/QRF/AA occupation?
2. **Tailor your Support Package.** Plan in detail to reduce friction once deployed. Know the who, what, when, where, why, and how of the initial package and required maintenance support in the field.
3. **LNOS to Support Units.** If possible, send an LNO to all levels of support, or ensure they have the proper information and equipment to complete the task.
4. **Preventative Maintenance.** Aggressively conduct post-flight inspections and screen logbooks immediately after missions. Inspect, clean, and protect critical components frequently.
5. **Proactive Mission Support.** Have personnel on-hand during mission launch.
6. **Plan for Contingencies.** Has everything been done (plan and rehearse the "5 Ws") to conduct CSAR/DART/BDAR? **k**

CHAPTER 10

RISK MANAGEMENT FOR THE AVIATION STAFF

by CW2 William Rains

"Sizing up opponents to determine victory, assessing dangers and distances is the proper course of action for military leaders."

Sun Tzu, ***The Art of War,*** "Terrain"

Risk management – we've all heard about it and write it off as just some of that "safety stuff." The risk management process is not some strange concept that a desk jockey devised while thinking of bullets to put on his support form. It is a deliberate process which allows commanders to categorize, process, and mitigate risks in **any type of operation** (including convoy operations, retrans operations, and FARPs). Fratricide is also a generally overlooked, and yet significant, hazard. We all conduct risk management in our everyday lives without thinking: while driving our cars, walking on wet pavement, or even playing with our children. Formalized risk management is merely taking this generally unconscious process and bringing it into the conscious portion of the brain. The desired result is that leaders understand the risk involved with each operation they undertake and reduce the risk to an acceptable level where the benefit of mission accomplishment outweighs the risk taken. This article will explain staff roles in risk management, how to integrate risk management into the Military Decision-Making Process (MDMP), risk assessment versus risk management, the role of the aviation safety officer (ASO), and how to disseminate control measures to the people who need them.

Risk Management in the MDMP

"Risk Management is integrated into the military decision-making process."

FM 101-5, ***Staff Organization and Operations***
Annex J - Risk Management

The commander, through his planning processes, must be able to quantify the risk he can reasonably expect during an upcoming operation. Only by doing this can a commander make **calculated** risk decisions based on tactical and accident hazards. Aviation staffs can recognize hazards during the MDMP and consequently control these hazards through risk reduction. Battle planners have, in the past, identified hazards in their planning and probably mitigated the risk by employing control measures, such as a fire support coordination line (FSCL), without a second thought. Staffs at the NTC are executing some risk reduction, but observers have seen some areas where improvement is possible. The risk management worksheet must be a by-product of the MDMP and outline all identified hazards as well as associated control measures. When performed correctly, this function allows commanders to recognize pertinent residual risk and accept or disapprove at the proper level. Commanders may also be able to determine whether or not to conduct the operation based on the benefit-to-risk ratio. If each developed COA has a related risk level associated to it, this becomes another decision aid for the commander.

"Take calculated risks. That is quite different from being rash."

General George S. Patton, Jr.

Risk Assessment Versus Risk Management

We all do a risk assessment matrix as part of normal flight planning. This procedure is normally misconstrued as fulfilling the requirement of **AR 95-1, *Flight Regulations,*** to integrate risk management into all aviation operations. Risk assessment is only the first two steps of the process and does not fulfill the requirement. Risk assessment matrices are merely tools for the commander to identify potential hazards. Only by completing the process can a unit accomplish risk reduction through implementation of identified control measures.

How to Integrate Risk Management in the MDMP

"Every staff officer must integrate risk management into the planning and execution of training and operational missions."

FM 101-5, *Staff Organization and Operations*
Chapter 4, page 4-7

All members of any planning cell must be able to recognize hazards inherent to their piece of the plan. The chief of staff /executive officer (XO) must reinforce this when they brief the staff before initiating their planning and the MDMP. A technique is to require each planning cell to identify all hazards associated with their portion of the mission during planning. Once they identify the hazard, that cell should also identify appropriate risk reduction measures since they are the subject matter experts in that area. Someone must consolidate these hazards and controls and give them to the person responsible for completing the risk management worksheet (generally the ASO). **CALL Newsletter No. 99-5, *Risk Management for Brigades and Battalions,*** Apr 99, outlines this process.

The following commander and staff responsibilities are recommended for risk management during operations. They are consistent with those outlined in FM 101-5.

Commander (Overall) ! Provide risk guidance. ! Select hazard control options. ! Make risk decision for COA. ! Enforce and evaluate controls.	Chief of Staff (XO) (Staff Supervision) ! Supervise risk management integration across entire staff. ! Ensure hazards and controls are integrated into plans and orders. ! Ensure staff monitors controls during execution.
Staff Officers (Functional Area) ! Identify hazards most likely to result in loss of combat power. ! Develop control options that address reasons for hazards. ! Integrate hazards and selected controls into functional area paragraphs, graphics, and annexes of OPORD, and monitor implementation during execution.	Safety Officer (Coordination) ! Assist commander and staff with risk management during mission planning, execution and assessment. ! Collect hazards and controls identified by staff; use to prepare risk assessment and control measures for all operations. ! Coordinate staff risk management and make recommendations to G-3/S-3.

CALL Newsletter No. 99-5, *Risk Management for Brigades and Battalions*

The responsible individual can then insert the information into the worksheet to determine initial and residual risk levels for each hazard and choose the best way to implement each control. Standardized documents are generally the best form of implementation of controls. The OPORD is the ideal vehicle to disseminate the control measure(s) for specific missions, with the unit SOP being better for long-term implementation. The final step is to identify who will supervise the control measure and determine whether or not it was effective.

The Aviation Safety Officer's Role as Part of the Commander's Battle Staff

The ASO must be an active part of the commander's battle staff. A trend at the NTC shows that the ASO locates separately from the battle staff and functions autonomously. While there are functions of the ASO's job as the commander's direct advisor on safety and risk management that will take him away from the TOC, the ASO should be present for any mission planning and development. The ASO should be the primary conduit for any hazards identified in the planning process, as discussed earlier. Although completion of the risk management worksheet is not necessarily a responsibility of the ASO, he is the best person for this task. XOs and S-3s should ensure that the ASO is present during planning, or that someone will fill his shoes as the risk management liaison and worksheet preparer. Again, the risk management worksheet **MUST** be a product of the MDMP, or individual mission planning at company and lower. Unless developed out of mission planning, the worksheet merely becomes a piece of paper filled out in a dark corner somewhere. The result is the integration, as much as possible, of identified risk reduction measures into the orders preparation phase. Controls implemented through the OPORD carry greater weight and have the best dissemination. Attaching the risk management worksheet as an annex of the OPORD is a technique when time is critical; however, this reduces its effectiveness. Finally, the ASO should monitor the execution of the mission to determine whether controls are effective.

Conclusion

The outstanding trend is that risk management integration is incomplete and becomes an afterthought, or detached from any mission planning. NTC observer/controllers are continually coaching this process, which, like most tasks, becomes easier with practice. Staffs who conduct Home Station training to develop systems that ensure integration of risk management, and specifically their ASOs, are always more successful in the "heat of battle." ASOs need to be able to speak the same language as the rest of the battle staff and operate effectively in the MDMP. By integrating risk management into the planning of all military missions, the commander's situational awareness becomes greatly enhanced, allowing him to better protect his soldiers and preserve his combat power.

Tactics, Techniques and Procedures

1. XOs and S-3s must ensure their planners can comfortably integrate risk management into the planning process and understand how best to employ the ASO, or continue the risk management process in the ASO's absence.
2. ASOs need to be proficient in the tactical applications of their job according to the U.S. Army Safety Center, Aviation Safety Officer Course.
3. ASOs need to think beyond the cockpit and understand the big picture, i.e., the ground scheme of maneuver.
4. Senior ASOs need to mentor company-level ASOs who have not had the opportunity to work at battalion level and higher. **k**

References

AR 95-1, ***Flight Regulations,*** 1 September 1997
CALL Newsletter No. 99-5, ***Risk Management for Brigades and Battalions,*** Apr 99
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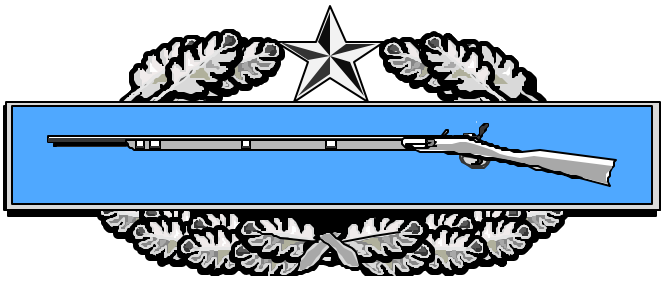


CHAPTER 11

HOW TO DEFEAT THE PPG AT NTC

by CPT Robert T. Ault

One of the questions every aviation task force that comes to the National Training Center (NTC) has to answer is this: "How will I defend my tactical assembly area (TAA) from the People's Parumphian Guerillas (PPG)?" The security of the aviation TAA is vital to the overall mission of the aviation task force. Without a viable TAA security plan, the unit may find itself taking large numbers of unnecessary casualties and damage to equipment. Ultimately, survivability moves are the answer, but each "jump" the aviation task force conducts diverts time, energy, and manpower away from providing support to the BCT. It becomes critical for the aviation task force to have a comprehensive yet realistic plan to defend themselves against Levels 1 and 2 rear area threats.

The constraints of the average aviation task force do not allow manning 100 percent of the perimeter around the clock. In reality, when considering crew and mission cycles, the task force is usually forced to man a few dismounted crew-served weapons positions and not much else. This forces the careful consideration of key terrain and commitment of the remaining assets toward TAA defense and which positions to occupy.

TTP 1: Establishment of clear roles and responsibilities.

Discussion: One of the most important factors in defending the TAA is the assignment and definition of roles and responsibilities. The unit must establish and rehearse a solid chain of command prior to arrival at the NTC. The aviation task force commander, the HCC commander, and the task force CSM must work together to agree on who will do what with which assets, and when.

"A way" is to designate the HHC commander responsible for perimeter defense. This includes the entire perimeter and the FARP. This is a natural role for the HHC commander; he is often the leader of the quartering party and will establish the initial perimeter. In addition, the HHC commander is already in command of the majority of the task force's non-flying personnel, such as motor pool mechanics and cooks, so this technique requires no new chain of command.

The HHC commander should assume the responsibility of placing all crew-served weapons as well as supervising the placement of all obstacles. In consultation with the CSM and the S-2, the HHC commander develops the plan to restrict access into the TAA through designated routes both in and out based on METT-T. These factors must be considered before moving to the new TAA. The tactical analysis of the terrain, based on METT-T, may, in fact, dictate the placement of companies on perimeter.

TTP 2: Adhering to the priorities of work.

Discussion: In reality, the perimeter is well on its way to either becoming functional or not within 30 minutes of the quartering party's arrival. All personnel must understand and enforce the priorities of work. If the leader in charge of the quartering party does not establish good 360-degree security immediately upon arrival, the task force may never really get a grip on TAA defense.

TTP 3: Leader emplacement of crew-served weapons.

Discussion: It takes a strong technically and tactically competent leader to understand the placement of crew-served weapons and interlocking fires. Too many times, once the quartering party occupies an area, they "go admin" and wait for the arrival of the main body serials. A good quartering party SOP and rehearsals can go a long way toward refining this operation and defining roles within the quartering party.

TTP 4: Leaders must walk the perimeter.

Discussion: Once the HHC commander understands how he will defend the new TAA, he must walk the ground that is to become the TAA perimeter with his subordinate leaders. A shovel or stake can serve to clearly define where the HHC commander wants the fighting positions, as well their orientations. All too often the chain of command does not plan the orientation and the left and right limits of individual fighting positions. Once the subordinate leader receives his positions from the HHC commander, he must walk with his subordinates and physically place the marker in its position. This leadership involvement gives the chain of command the best chance to ensure the position locations are integrated.

TTP 5: Role of the task force CSM in TAA defense.

Discussion: The task force CSM is a key player in TAA defense. Because of his task force level focus and experience, the CSM must be included in the selection of crew-served weapons' locations around the perimeter. The CSM also helps establish, monitor, and enforce priorities of work in the assembly area. He ensures that construction of fighting positions is to standard and in accordance with unit SOPs.

TTP 6: Integration of the HHC commander, S-2, and CSM.

Discussion: The HHC commander, CSM, and S-2 must collectively review TAA sector sketches. This should confirm what the HHC commander already knows. If the CSM did not enter with the quartering party, he reviews the plan at this time.

TTP 7: Well-constructed leader supervised fighting positions.

Discussion: Soldiers in the TAA must have well-constructed fighting positions with interlocking fields of fire as well as simple, well-rehearsed battle drills. Communications from dismount points and LPs/OPs is critical. The reason for the effort in building fighting positions and wire obstacles to standard is force protection. In this sense force protection refers to the soldiers in the TAA being able to execute their common tasks and basic training skills to stay alive and fight until the TAA develops situational awareness about the attack. A task force that fails to take the basic steps of digging in, laying wire, and practicing battle drills is denying their soldiers the ability to survive in the first few minutes of an attack when the situation is not yet developed and the PPG has the initiative. It is in these first few moments that the PPG moves freely and kills the most BLUEFOR soldiers. This is because the soldiers in the TAA do not know where to go, what to engage, or who is friend or foe. If the perimeter can quickly establish control of the TAA, it reacts to the attack and the PPG will lose their "superman" status and be killed.

TTP 8: Continual improvement of the defense.

Discussion: Defending the TAA is like any other defensive operation -- the defensive preparation never ends. The unit must continue to improve and strengthen its positions and obstacles. Units must develop a plan to use wire obstacles at Home Station. With a little forethought and coordination with the FSB during RSOI, the unit can arrange for sufficient Class IV. If Class IV is not available, the tactical placement of wire obstacles becomes even more critical to the TAA. Such a critical task must be the responsibility of the HHC commander.

TTP 9: Development of engagement areas.

Discussion: In the desert environment, almost any open area can become a high-speed avenue of approach for the PPG. Wire obstacles serve to channel and direct the PPG into predetermined pre-sighted engagement areas with TRPs. Very rarely does an HHC commander actually think about where he wants to kill the enemy. Wire obstacles that are not to standard and do not have an observation plan are useless. The PPG can easily breach a single strand of concertina wire with a 2 x 4 piece of wood.

How does the aviation task force set up this kind of a perimeter? An important point to remember is that the perimeter defense must improve over time. During quartering party operations, personnel must place any crew-served weapons that are present and plan for the placement of crew-served weapons yet to arrive. The HHC commander and subordinate leaders must understand the maximum effective engagement ranges for their weapons. The .50 caliber machine gun is not simply a big M16. Leaders must plan to engage at the weapon's most effective limit, and place the gun accordingly. This means that the HHC commander, to provide the best fields of fire for his crew-served weapons, must use key terrain effectively.

TTP 10: The need for leaders to look back at the TAA defenses.

Discussion: Once they have completed the general defensive plan on the ground, the HHC commander and CSM need to exit the perimeter and look back at the defenses. This will allow them to become more familiar with the various approaches to the TAA. The commander and CSM will be able to identify various wadis and aid in overall situational awareness.

TTP 11: Use of dismounted patrols.

Discussion: The use of dismounted patrols at NTC tends to work well. Dismounted patrols (especially during the hours of limited visibility) tend to give the TAA situational awareness. Patrols restrict the movement of the PPG. They are no longer free to approach as they want; they must evade the patrols and seek cover.

TTP 12: Fratricide prevention planning.

Discussion: Three simple steps can significantly reduce the risk of fratricide. Every soldier manning a position in the perimeter must know the patrol plan, when and where the TAA will conduct dismounted patrols. The chain of command must devise a simple communication plan between the dismounted perimeter patrols and the HHC commander or task force CSM. The commander must have a way to direct them if necessary and think through some simple IFF measures. Such measures could include: a running password (even over the radio), the designation of a "safe lane" to approach the TAA, or the use of predetermined signals. Another important point to remember is that none of these techniques takes the place of good clear rules of engagement and solid identification of targets prior to engagement.

TTP 13: Developing situational awareness immediately outside the TAA.

Discussion: A working knowledge and good situational awareness of the threat is imperative for everyone on the perimeter. Inform aircrews what to look for and how far out they can expect to see the threat. Using aircraft to sweep the TAA and FARP upon departure and arrival is another viable active defense method.

Once the PPG has attacked, what does the TAA do next? This is a contingency the unit must plan and rehearse continuously.

TTP 14: Employment of the quick reaction force.

Discussion: If possible, the unit should dispatch a quick reaction force (QRF) to counter the threat. If the task force is not able to mount this additional force, then maneuver of the dismounted patrol against the PPG is necessary.

TTP 15: Soldier reaction during an attack.

Discussion: The key to surviving a PPG attack is the quick reaction of soldiers in the TAA. They must know, and rehearse, what to do in the event of a ground threat to the TAA. The wrong answer is to do nothing, or to have soldiers attempting to individually fire and maneuver on the PPG without situational awareness.

TTP 16: The need to boresight.

Discussion: Once the PPG attack is underway, the single most important factor in killing the PPG is the basic marksmanship skill of being able to kill your target. The only way to accomplish this is to boresight the crew-served weapons on the perimeter daily. Once the PPG make contact with the perimeter, this is the only way to effectively stop them.

TTP 17: HHC commander command and control plan.

Discussion: Throughout the attack, the HHC commander must be in a position to command and control the defense. This location will depend on the situation, but he must have a plan. The task force CSM can serve a vital role during the attack by either directing the QRF or helping the HHC commander coordinate the defense. Once the task force responds to the attack, the immediate priority of the TAA must be defense of the perimeter and killing the PPG. To this end, the commitment of an aircraft to provide pressure on the PPG can be critical. If the ROE is clear and the threat is identified, door gunners, rockets, or chain guns make viable responses to the threat.

TTP 18: Post-attack actions.

Discussion: After the attack the TAA must consolidate and reorganize immediately. Commanders and 1SGs must begin assessing casualties and damage to equipment. They must begin the process of cross-leveling ammunition and requesting replacements, as well as processing reports to higher. Often the PPG does not allow days to pass before the next attack.

Conclusion

These are some of the successful tactics, techniques and procedures used at the National Training Center. Careful planning and rehearsals are crucial prior to entering the maneuver box. The BLUEFOR can defeat the PPG, but only if leaders know what "right" looks like and enforce the standards with their soldiers. With a little forethought, unit personnel can kill the PPG with minimum distraction to the aviation task force's mission in support of the BCT.

A final point to remember: Informed soldiers are combat multipliers!

CHAPTER 12

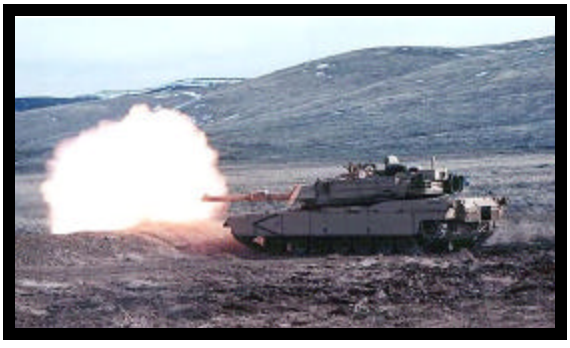
FRATRICIDE AND THE AVIATION TACTICAL ASSEMBLY AREA

by SGM Kevin C. Krum

Of all the combat skills and common tasks practiced at Home Station, units frequently overlook fratricide prevention. When a unit deploys to an area in conflict, the OPTEMPO can become overwhelming. As the pace and intensity of events escalates, a soldier's focus narrows and he relies on Home Station training to dictate priorities. If that training did not familiarize the soldier with fratricide prevention measures, it will be too late to establish the good habits and skills needed to ensure a unit does not pose a threat to itself. This article discusses fratricide prevention measures particular to the aviation tactical assembly area (TAA) and focuses on target identification, fire control, and the unit defense plan.

Target Identification

One of the main contributing causes of fratricide is that soldiers often do not identify the target before firing. When a soldier is unable to identify an aircraft, vehicle, or other soldiers as friendly, their anxiety level increases and they look for a sign that the target is hostile to justify the engagement. Contributing to target identification/misidentification are low-visibility conditions (weather, smoke, and darkness). Ensuring properly equipped soldiers, with the appropriate sights and vision devices, will aid in identification. Soldier knowledge is another factor of threat identification. A soldier who knows the current Air Defense Warning and Weapons Control Status (ADW/WCS), how to identify OPFOR vehicles and aircraft, and the current challenge and password (as well as daily changeover times) can better differentiate between friendly and enemy. All of the items listed above will help the soldier identify the threat, leaving only the decision to fire. However, once the engagement begins, how do we keep our rounds from striking our own? Fire Control.



Fire Control

Fire control begins with the operator making the decision to fire, ensuring that the weapon functions properly and the rounds hit the target. The single most important factor that influences fire control is soldiers' situational awareness. The knowledge of friendly units operating near the TAA, the current ROE, and the proper use of deadly force will reduce fratricide. One check of fire control on the defensive perimeter occurs when NCOs verify the correct positioning of fighting position limiting stakes. Properly established limiting stakes will restrict the weapon to the proper sector of fire. Soldiers engaging moving targets will be less likely to swing their weapons out of sector when the weapon hits the stake during their track of the target.

Another method to ensure your fire is not directed toward friendly forces is to conduct a thorough fratricide risk assessment. A risk assessment card that addresses fire control areas is a powerful tool in the prevention of fratricide. This can verify the TAA defensive sector sketch to ensure no problems exist with interlocking fires, and that all sectors of fire are clear of friendly forces out to the maximum range of each weapon. Fire control issues can range from ensuring soldiers do not keep a round in the chamber of their weapons to coordinating a unit to pass near the TAA through a sector of fire without drawing friendly fire. The best method to ensure all soldiers are complying with fratricide reduction measures is to have a good plan established. This plan needs to be written into the unit's TACSOP and included in the units training management cycle.

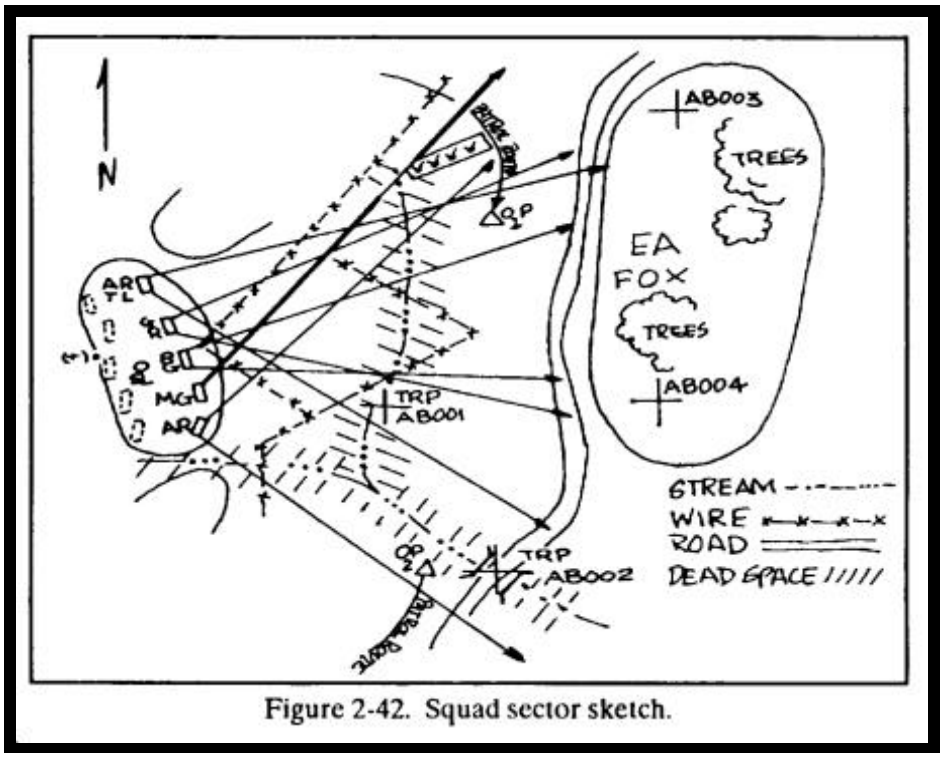


Figure 2-42. Squad sector sketch.

Defensive Plan

The unit's defensive plan is another important area to fratricide prevention. This is an area that is hard to train unless in an environment conducive to collective training and set in the appropriate scenario. Until soldiers see the enemy attack their perimeter, they will not be able to address the fratricide issues that arise during this kind of exercise. The following contingencies should be a regular portion of the defensive plan and printed in the unit's TACSOP: If the enemy makes a brief contact with the perimeter and backs off a short distance, do we go after him? Do we consider the risk of leaving the perimeter and crossing other fighting position's sectors of fire? Do we have a plan for the quick reaction force (QRF) to respond to this scenario, and if so, how do we identify the QRF as friendly once outside the perimeter, at night, while in close proximity to the enemy? Do we use a running password, as a contingency, to reduce the time it takes to identify our own soldiers once the enemy has made contact with the perimeter? What are our procedures if the enemy breaches our perimeter? The chain of command should base these contingencies on those events the unit expects to encounter. Once established, training and rehearsals will validate the plan and build confidence in the soldiers.

Tactics, Techniques and Procedures

1. **Home Station training.** Do not overlook these considerations at home: establishing a perimeter, reacting to all real or perceived enemy contact, movements inside and outside the perimeter, integration within the plan of a higher headquarters, and coordination with nearby units.
2. **Properly equip your soldiers.** Do not put a soldier on the perimeter at night without NVGs and/or some means of communication.
3. **Keep soldiers informed.** Soldiers with good situational awareness are more confident and more effective.
4. **Leader involvement.** Soldiers conduct PCCs and leaders conduct PCIs, from soldier knowledge to proper equipment to verification of range cards and sector sketches.
5. **Risk Management.** This is not just for aviation operations and/or convoys.
6. **Thorough planning.** Use your experience and the experiences of other units to build the SOP. METT-T dictates that every situation is different; however, flexibility improves when a unit is grounded in the basics.
7. **Soldier discipline.** Will soldiers do the right thing at the critical time? This is not solely a function of a good or bad soldier; effective training makes the difference. **k**